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University News

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Dr. (Ms) Girja Vyas, Minister of State for Tourism & Women Welfare, Government of Rajasthan, releasing the souvenir of West Zone Inter-University Youth Festival. On her left is Dr. K. N. Nag, Vice-Chancellor, Rajasthan Agricultural University. On her right is Shri Sampson David, Cultural Officer, AIU.

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2.	Neurology	—	2	2
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4.	Cardiology	2	2	4
5.	Urology	2	—	2
6.	Nephorology	2	2	4
7.	Surgical Gastroenterology	—	3	3
8.	Medical Gastroenterology	2	1	3
9.	Surgical Endrocrinology	—	3	3
10.	Medical Endocrinology	—	1	1
11.	Medical Genetics	1	2	3
12.	Clinical Immunology	1	2	3
13.	Pathology	—	4	4
14.	Microbiology	—	3	3
15.	Transfusion Medicine	—	3	3
16.	Radiology	—	3	3
17.	Nuclear Medicine	—	2	2
18.	Radiotherapy	—	2	2
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6. The Test will be held on December **12th & 13th, 1989** at SGPGI, Lucknow.
7. The merit list will be valid for a period of one year.
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Prof. B.B. Sethi
DIRECTOR

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Editor :
SUTINDER SINGH

Association of Indian Universities
64th ANNUAL MEETING

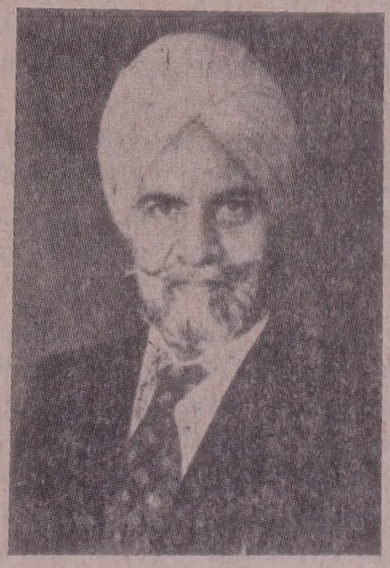
Presidential Address

Dr. Sukhdev Singh

Vice-Chancellor, Punjab Agricultural University

It is, indeed, a matter of great pleasure and privilege for me to have the honour to address this distinguished gathering. The annual meetings of the Association of Indian Universities provide a forum and an opportunity when those at the top of the echelons of country's educational enterprise are able to reflect upon the state of its well being. It is only through such reflective interactions, even if they may convey an impression of repetitive indulgence, that the past record, present status and the future direction of any activity or pursuit can be appropriately set forth.

Also relevant is the fact that the present meeting is being held at an opportune moment and in an auspicious year. Steps are already underway for the formulation of draft Eighth Five Year Plan and much that has to happen in the realm of education in the country in the near future and subsequently, would depend, to a large extent, on the pattern and quantum of resource allocations determined in the Plan document. Concerted thinking and appropriate follow-up action on our part is necessary to secure the desired strength and support for the cause of education. Also, this is the year the nation has chosen to observe as a period of introspection and for drawing inspiration from the thinking and accomplishments of that great visionary, and the first Prime Minister of India, Pandit Jawaharlal Nehru. In one of his most memorable statements, he aptly summed up the significance and the role of higher education in general and universities in particular for the well-being of human societies. He said,



Dr. Sukhdev Singh

> "A university stands for humanism, for tolerance, for reason, for the adventure of ideas and for the search of truth. It stands for the onward march of the human race towards even higher objectives. If the universities discharge their duties adequately, then it is well with the nation and the people."

Unfortunately, of course, one can now add a caveat to the foregoing quoted formulation in the sense that functioning of universities as of other institutions, cannot be viewed in isolation from the prevailing state of socio-economic and political situation in the country which unfortunately is not too happy.

Education is a multidimensional subject and can be looked into from a number of alternative perspectives. It has many aspects, levels and dimensions in its structural and functional format. A complete and exhaustive treatment of all of these varied elements can be too strenuous an exercise for anyone to undertake within the purpose and time constraints of a formal address as the present occasion requires. I have, therefore, chosen to be selective in my approach.

Keeping in the background the perspective of the New Education Policy adopted in 1986 after much discussion and debate, I would like to use the august opportunity given to me to draw attention to three important concerns : first about the underlying mission and functional relevance of the established Indian Universities; second, the linkage between the base and the super-structures of education and more particularly the primary and the university level of education; and third, the institutional structure and style of policy making in matters concerning education. My choice here is arbitrary, but nonetheless, deliberate, and there are occasions in life when one can indulge in arbitrariness. Further, the three concerns may appear to be somewhat desparate or an unconnected set of elements for coherent discourse. In my view, however, one way or the other, they focus upon the pursuit of excellence and which has been adopted as the directive principle of higher education planning in the country under the impress of the New Education Policy.

Situated as they are, at the apex of the educational pyramid, the 140 or so universities together with about 5000 constituent or affiliated colleges, are supposed to be generators, repositories and diffusers of knowledge. Mr. Adiseshiah, a noted educationist and an economist, has conceptualised the role of universities in five specific categories.

1. As agents of change
2. As means of personality development
3. As agents for changing attitudes and values
4. As agents for the spread of science and technology
5. As the providers of manpower for socio-economic development.

Similarly, the University Grants Commission has defined the functions of a university as comprising (i) teaching, (ii) research, and (iii) extension.

The New Education Policy has also incorporated within its operational ambit, a number of parameters considered relevant for a quality conscious system and process of higher education. These relate to the socio-economic well-being, competence and creativity of the individual and which encompass the following:

(i) Physical, intellectual and aesthetic development of personality;
(ii) inculcation of a scientific temper and democratic, moral and spiritual values;
(iii) development of self-confidence to innovate and face unfamiliar situations;
(iv) creation of an awareness of the physical, social, technological, economic and cultural environment;
(v) fostering a healthy attitude to dignity of labour and hard work;
(vi) a commitment to principles of secularism and social justice;
(vii) dedication to uphold the integrity, honour and foster the development of the country; and
(viii) promotion of international understanding.

In addition to developing the personal attributes, the policy document also stipulates that education at higher level has to assume the responsibility for imparting knowledge about concepts and facts relating to different subjects, to become dynamic as never before, constantly entering unchartered areas and to contribute to national development through dissemination of specialised knowledge and skills.

Whereas the normative aspect of the role definition of a university is well documented and laid out in sufficient and specific terms, the realised structural and functional arrangement in a typical Indian university is anywhere near the required standards. Despite the labours of a number of commissions, committees and other policy making forums, there seems to have been little impact on the academic and other related characteristics of most of the institutions of higher learning in the country. Out of the three aforesaid functions, teaching along with the related activity of conduct of examinations, has become, *per se*, the principal undertaking thus leading to the charge that a large number of our universities and colleges are merely degree and diploma granting establishments. The other two functions, that is, research and extension have been atrophied to such a routinised format that there is very little innovative contribution to the advancement and utilisation of fund of knowledge when judged in terms of the criteria and standards set elsewhere in the world.

Another long standing problem in the institutional setting of higher education in India is the proliferation in the number of universities and colleges when financial constraints severely limit the qualitative growth of ones which already exist. The ill defined government-university relationship in many cases further heightens the intensity of the near chaotic state of affairs. The evidential material is well provided in the report recently released by the Association in regard to the dismissal of Vice-Chancellors in Bihar, and the situation arising out of the Orissa Universities' Act (1989). It must, however, be added that in this normally prevalent dismal situation in the universities, there are a large number of notable exceptions. One such recent example is that of the Poona University where the world's largest Metre-wave Radio Telescope is being put up under the aegis of the Inter-University Centre for A stronomy and Astrophysics. Such initiatives and developments should not remain exceptions but become the normal state of functioning of our universities.

Thus, it is high time that this aspect of the social relevance of universities and colleges is given, once again, the most concerted and analytical attention. There is, perhaps, a need for examining and re-writing the existing charter of operations of the universities specifying their functional mission in such a manner that they truly become the motive force for achieving excellence within their own domains and agents for social and economic development.

I am tempted here to emphasise the fact that an alternative institutional model has already been tried within the country through the emergence of State Agricultural Universities, Indian Institutes of Technology and Indian Institutes of Management. Having been associated for a long time with the functioning of agricultural universities, I would like to elaborate in somewhat more detail, the substance and style of their operational milieu.

The Agricultural Universities movement has, without doubt, proved that this imaginative concept has a great potential and in the perceptive words of John P. Lewis :

> "These universities have become pivotal instrumentalities of change and development in the States where they have sprung up and as events proceed, their involvement in the whole life of their States, will ramify."

Unlike their counterparts in the traditional educational set up, the Agricultural Universities exhibit a number of innovative characteristics in the structure and scope of their functioning. These are (i) a strong sense of social relevance in serving the interests and needs of well defined clientele, that is, rural people in general and farmers in particular; (ii) a mission-oriented spirit in both basic and applied research endeavours; and (iii) the carrying out of teaching, research and extension education functions in an integrated institutional matrix. As a consequence of such a mode of functioning, these universities have played a significant role in the increased pace of agricultural development in the country and attainment of quantum jump in the level of production of food-grains and other agricultural commodities.

The Punjab Agricultural University, which I have had the pleasure of serving for long years, is a good case in point. Prior to the introduction of the new technologies, recommended by the University and adopted by the hard-working and intelligent peasantry of the State, the wheat production in the year 1965-66 was only 19 lakh tonnes, barely sufficient to meet the State's demands. The wheat production increased to as high as 115.8 lakh tonnes in 1988-89. Similarly, in case of rice, the State was hardly known for this crop. From a production of 3.3 lakh tonnes in 1965-66, the production in 1987-88 was of the order of 54 lakh tonnes. The State, which occupies only 1.53% of the geographical area of the country, has been supplying around 60% of the wheat and rice to the National Pool over the years. Similar progress has been made in other crops. In sugarcane, we were labelled as a low recovery area and the Government of India did not agree to grant the State Government licences for setting up sugar factories. Now with the introduction of sugar—rich sugarcane varieties developed by the University scientists, our sugar recovery of about 10% is one of the highest in the country and we are second only to the State of Maharashtra. Similarly, we produced about 20 per cent of the country's cotton. The farmers of the State acknowledge the University as a temple for their temporal needs.

The impact of new technologies developed by the agricultural university system and policy support by government on agricultural production in the country as a whole is now well known. It is a matter of great satisfaction that the estimated rice production of 73 million tonnes in the current crop will be an all-time record in the country. The development has been noted all over the world and a point is often

raised in international forums that if it has become possible in India, why cannot it happen in other countries which face more or less similar socio-economic challenges. The implied compliment is well deserved.

The history of this movement which made possible the establishment of one or more Agricultural Universities in each of the constituent States of India, is studded with the thoughtful deliberations of a number of commissions, committees and study teams. The University Education Commission under the chairmanship of Dr S. Radhakrishnan, made the far reaching recommendation of setting up Rural (Agricultural) Universities in India patterned on the Land Grant System of Agricultural Universities in the United States of America. Thus, agricultural education received a place of pride and given an epoch making direction for growth. The Commission's recommendations were further endorsed by the First and Second Joint Indo-American Teams in 1955 and 1959, respectively; Ford Foundation Study Team (1959); the Cummings Committee on Agricultural Universities (1960-62); a formal resolution of the Government of India and a policy decision of the Planning Commission in 1961; Report of the Kothari Commission on Education (1964-66); the Agricultural Study Team of the Administrative Reforms Commission (1967), and last of all, by the National Commission on Agriculture in 1975.

As regards the organisational pattern, three different models of agricultural universities have come into existence—single campus universities such as Hisar (Haryana), multi-campi universities such as Jabalpur (Madhya Pradesh) and multi-universities system such as in Uttar Pradesh and Maharashtra. In functional terms, these universities have not only integrated teaching, research and extension activities, but have also integrated their instructional and research programmes relating to agriculture in the widest sense, that is, basic and applied sciences relating to crop and livestock husbandry, forestry, veterinary science, home science, social and behavioural sciences, agricultural engineering, etc. Courses in the subjects of humanities, business management, extension education, journalism and agricultural communication are the other essential components of the academic scheme in as much as they are relevant to the basic character and scope of functioning of an agricultural university.

A number of agricultural universities have reached such a stage of development that they can reorient their mission to not only have a continuous focus on the scientific development of agriculture, but also to involve their intellectual energy and resources to attend to such concerns which have a direct bearing on the quality of rural life in general. It was in this context that the 16th Convention of the Indian Agricultural Universities Association held in 1988, resolved that steps should be taken for setting up Centres for Rural Development Studies at the Agricultural Universities. These centres are envisaged as interdisciplinary forums to undertake conceptual, analytical, empirical and evaluative studies on rural development problems, policies and programmes and to provide feedback to the university and other research and development agencies regarding appropriate technologies and models of organisation for rural development.

During the short span of 25 years of their existence, with, of course, varying life spans and histories, the Agricultural Universities have affirmed the soundness and strength of the concept and assumptions underlying the model.

My main contention here is that a radical restructuring of the nature and scope of functioning of our universities is urgently called for. The agricultural universities model can serve a useful frame of reference for such a restructuring. There are, of course a number of very difficult and complex issues to be resolved. A few of these are being suggested only as examples.

What specific institutional mechanisms should be provided in order to strengthen and integrate all the three functions of the university i.e. teaching, research and extension to the maximum extent ?

Should our universities not restrict themselves only to postgraduate teaching and research and leave undergraduate instructional responsibility to the colleges ?

Would it not be desirable if instead of the universities, a separate examining body is created to conduct all undergraduate college level examinations ?

What specific science and technology missions, client populations and interests to be served and advisory and think-tank roles should be laid out for each university ?

What modifications should be made in the re-

sources, philosophy, style and structures of management for the new pattern of university organisation ?

The last but one question also incorporates the proposal made by the Vice-Chancellor, Gandhi Gram Rural Institute and discussed at the 63rd Annual Meeting of the Association regarding developing universities as brain banks of the state and the community within their respective jurisdictions. The state agricultural universities have a strong institutional mandate and the requisite operating mechanisms and structures whereby they are able to develop active linkages with government agencies and departments for performing the think-tank role in policy making and also with well defined beneficiary population such as farmers and related industry and business enterprises to serve their interests through problem solving research. An expert panel may be named by the Association to probe into the whole matter and develop a set of concrete recommendations for further consideration.

I would now like to draw attention to the second important concern and that is about the status of primary education, particularly in the rural areas, and its relationship with higher education. Although in the scheme of things, in our individual roles and collectively as members of this august Association, we primarily deal with matters relating to university and college level education, yet I cannot help taking the position that quality of education at the primary stage should also be a legitimate focus of our thinking and analysis. The relational nexus between the primary and the higher levels of education cannot be over-emphasised. Primary schools are aptly viewed as feeder nurseries for higher education and we must maintain them in a healthy and vigorous state. On the contrary, the present situation is that of critical sickness. Beginning with the Sargent Plan which aimed at providing free, compulsory and universal education to children up to the age of 14 years within a period of 40 years, that is 1944-84, the subsequent Constitutional provision (1950) which directed the State to reach the target within 15 years, that is, by 1965 and further reiteration of the same policy with or without targetted dates as per the Kothari Commission Report (1964-66), the National Policy on Education (1968) and the latest New Education Policy, the cherished goal could not be achieved till the present time. In 1986 approximately 95 per cent children in 6-11 age group and 50 per cent children in 11-14 age group, were enrolled in schools. The retention figures make the picture further dismal. Nearly 60 per cent children reportedly drop out between classes I-V and 75 per cent between classes I-VIII. A large number of these children come from rural families including the backward and the poorest strata of society. The resultant heavy loss of the creative potential and talent is obvious through the rough and reeky sieving process which characterises the very beginning years of schooling. Nearly one-third of the schools in the rural areas have only one teacher and how these schools provide uninterrupted flow of integrative and high quality learning experiences in various subjects and skills is anybody's guess. In addition, a large number of village settlements are without any primary school and majority of those which have schools, do not possess such essential amenities as mats to sit on, (to think of desks will be a mad dream), water supply, safe walled-in room space and even black-boards, what to speak of the other middle range and hi-tech audio-visual materials and equipment.

I went to such a typical village primary school over half a century back. But for the fortuitous posting of a dedicated teacher at the crucial fourth class stage and the motivation from my family. I would have been a dropout. The pity is that the typical village school has not improved a bit in its facilities since my primary school days in the mid-twenties, and many a potential brains amongst the rural children get culled out at this stage and the choice for excellence for the higher level education gets reduced drastically to that extent. This background of my roots deep in rural life compels me to dwell on this issue. The relative difference between the facilities and style of functioning of the government primary schools and the privately endowed public schools is truely reflective of the dichotomy between the millions who live in Bharat and the select few who inhabit India. Such inequitable distribution of the privilege of access to education, makes a mockery of our socialistic pretensions.

It is often contended that equity and quality aspects of education are antithetical to each other. In other words, both these goals cannot be accomplished together. In an article published in a recent issue of *Economic and Political Weekly*, Tapas Majumdar has convincingly argued that education being a groping and probing process, can filter the good from the indifferent only after a long and continuous search. He further advances the proposition that larger the number-base of entrants (and

their retention) in the education stream in general, the greater is the prospect of ending with the right array of people trained in the right way for jobs in every kind of specialised education. In other words, the pursuit of equity in the beginning may lead to higher quality and efficiency at the end as an outcome. What we need to ensure in the beginning stages of the educational process, is the concept of equitable quality rather than selective quality. Therefore, the attempt to correct these imbalances through setting up a selected few high quality schools such as Navodaya Vidyalayas is not going to make much dent in changing the structure and content of the presently low level of school education. The policy needs to be seriously reviewed in order to broaden the scope of quality improvement in the vast number of existing schools. The problem of availability of required amount of investable financial resources would have to be squarely faced. Not only, the total allocation to education has been declining through the successive Plan periods, there is the further complicating question of distribution of the allotted funds within the education sector as between the various levels. A realistic appreciation of the priority issue can alone provide the desired answers. All levels of education must be synchronised in terms of their relative importance and function in a complementary rather than competitive set of relationships. The Association should undertake to prepare a policy and approach document which clearly provides a blueprint of networking of the whole education system starting from the neighbourhood or community concept of primary schools as feeders to higher secondary and colleges and universities in well defined geographic regions. Minimum standards of quality attainment must be laid out together with steps and mechanisms to mobilise community and state resources to implement the blueprint plan. We must resolve to appoint a working group to fulfil this mandate.

Lastly, there is the broad concern for the structure, substance and manner of policy formulation process in the field of education. Evidently, it is a complex question since the domain of education encompasses multi-type, multi-level and multi-system and sub-system manifestations. Further, the organisational bases of educational policies lie in a number of Ministries, Departments, Commissions, Councils and Organisations. And above all, education as an activity of governmental business is included in the concurrent list and entails as a consequence, the traversities of a number of centre-state relationship issues and questions. We confront here the proverbial 64 million dollars question, that is : How to structure good policies out of this vast and intricate web of levels, aspects and institutional linkages ?

As you all know, policy making has itself become a proto science and an art form. A number of persons are devoting their professional competence, time and attention to this field on a wholetime basis and as a result, have generated theories and propositions which can be used to good advantage by administrators and other practitioners engaged in policy making. I have no intention to dilate upon this aspect of the question *per se*. Suffice to say, however, that drawing upon this useful store-house of knowledge, we should certainly be able to improve upon our existing procedures and processes of policy making in education. A good policy, in general, has to be an appropriate blend of sound empirical data base and theoretical concepts and principles relavant to particular policy issues and concerns. A good policy has also to pass the test of comprehensive analysis in which every important relevant factor and implication thereof is taken into account. One has also to ensure that the proposed policy provisions are stated in the least ambiguous language and include instructions and relevant resource support for speedy implementation. Whereas the consultative base of the policy pyramid can be as wide as is appropriate for the policy concern in question, it has to peak out through different levels to one rather than many points at the top. In other words, although the policy process is enriched through the involvement of many forums for debates, discussions and consultations, yet it cannot be effective and efficient unless there is a unified single decision centre. The specific case which can best illustrate the relevance of these criteria for good policy making in education is the revised pay scales recently announced for college and university teachers. It can be shown that the policy making process in this case failed in three of the fore-mentioned tests. Firstly, there was no single nodal centre of decision making incorporating all the categories of teachers belonging to general purpose universities and colleges—Centre as well as State run; professional institutions such as Agriculture, Medical, Engineering and Scientific bodies such as Indian Council of Agricultural Research, Council for Scientific and Industrial Research, etc. The accepted format known as the UGC pay scales were supposedly devised only for the central universities. Other institutions and categories had to either adopt them or work out their own proposals on separate and individual basis. This resulted in a lot of noise in the process in the sense

that decision making became multi-centred and the judgements made at any one of these centres had implications for all of the others. The noisy state still continues to prevail. Secondly, the instructions laid out in the policy announcement communications were not clear enough on many points. Literally, it was a case of much more unwritten content lying between the lines than in the form of words and sentences expressed on the lines. Vagueness led to repeated modifications, amendments and consequent bureaucratic delays in implementation. Here again, the game of back and forth referencing continues to be played by different units and levels constituting the policy making process. The more complicating factor emerging out of this near chaotic situation is shortening of the deadline period by which the state governments have to adopt the policy and draw upon the committed financial support from the central ministries concerned. Thirdly, there was a relative lack of carefully collected and analysed data material having a bearing on all aspects of the policy and very little, if any, written and published conceptual analyses which could be used for open discussions and debates. Whatever such information was available, was only in the form of handouts and pamphlets advocating the cause of particular interest groups.

Out of all this, I would like to make two specific proposals for consideration. One, the Association should promote the idea of setting up a Centre for Research on Educational Policies (CREP) and take up the policy case in question for a detailed study so as to draw lessons for the future. Such case research is a normal academic activity elsewhere in the world and has paid rich dividends. Second, there should have been and is even now a need for establishing a nodal body called Education and Research Pay Commission which could periodically review the matter for making recommendations all across the board at the same point of time and covering the pay scales of university and college teachers as well as all other scientific establishments like the IITs, medical institutions and other scientific organisations such as CSIR, ICAR, ICMR, etc.

In concluding, I would like to take the opportunity to express gratitude to the Association and the organisers of the meeting to allow me to share some of the thoughts which I considered appropriate for the occasion. I hope, I have succeeded in this endeavour.

Once again, I thank you, all. □

INAUGURAL ADDRESS

Gen. K.V. Krishna Rao (Retd.)

Chancellor, University of Kashmir and Governor, Jammu & Kashmir

I consider it a privilege to have been invited to inaugurate this 64th Annual Meeting of the Association of Indian Universities. I have, sitting before me, people who possess not only academic excellence, but who also combine in themselves the equally important attribute of administrative acumen. I have always found it intellectually stimulating to be in the midst of any such gathering. I am sure that the deliberations which will be conducted by this august body in the next few days, will be of immense benefit to the sphere of higher education in the country. I am also sanguine that well thought out and implementable ideas will emerge from these deliberations.

As you are aware, we have set for ourselves certain objectives to work for, in our Constitution. These are "to constitute India into a Sovereign, Socialist, Secular, Democratic Republic" and to secure to all our citizens Justice, Liberty, Equality and Fraternity. It was always felt that education plays a vital part in the achievement of these objectives. The National Policy on Education—1986, states "Education has an acculturating role. It refines sensitivities and perceptions that contribute to National cohesion, a scientific temper and independence of mind and spirit—thus furthering the goals of socialism secularism and democracy enshrined in our Constitution." It goes on to add "in our culturally plural society, education should foster universal and eternal values, oriented towards the unity and integration of our people. Such value education should help eliminate obscurantism, religious fanaticism, violence, superstition and fatalism". On higher education, the policy document says "Higher education provides people with an opportunity to reflect on the critical social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills. It is, therefore, a crucial factor for survival. Being at the

apex of the educational pyramid, it has also a key role in producing teachers for the education system". Friends, with this enlightened audience, I feel I do not have to go over the internal scenario of the nation, where "the goals of secularism, socialism, democracy and professional ethics are coming under increasing strain", with separatism, regionalism, religious-fundamentalism, communalism, linguistic fanaticism and other such parochial traits corroding the very core of our nationhood. Keeping our national objectives in view, it may be profitable for the country to carry out a reappraisal of the extent to which education has succeeded in its role ; and take remedial measures to overcome the weaknesses. I think you will agree that this kind of review cannot be a one time measure, but is something that must be done from time to time, for the goods of the nation. Here I am tempted to quote H.G. Wells, who said "Human history becomes more and more a race between education and catastrophe".

The present Indian system of education is perhaps among the largest and the most complex educational systems in the world. A few statistics will bear out my statement. Every sixth student enrolled at the primary level, every seventh at the secondary level and every eight at the tertiary level in the world, is an Indian. The number of students enrolled at the primary level is about 8.5 crores. This is more than double the population of Canada. The number of students enrolled at the secondary level is about 2.00 crores. This is roughly twice the population of Australia. The number of students enrolled at the tertiary level is about 0.40 crores. This approximates the population of Denmark. The number of teachers in India is equal to the population of New Zealand . This number is 3.5 times the number of teachers in USSR, six times those in the USA and nine times those in France. There are over 5,50,000 primary schools in India, which are more than 15 times the number of such schools in the United Kingdom. The number of colleges in India is approximately 5,000. This is equal to the number of schools in Malaysia. In addition, there are over 150 Universities and institutions of higher learning. In such a vast system of education, difficulties and problems are bound to surface from time to time. The performance of the system must, therefore, be reviewed regularly to keep it running efficiently.

Our present system of education has made many significant contributions to the development of our country since independence. The most spectacular achievement of the system has been the building up of a large and highly trained pool of scientific and technical manpower which has helpe d the country to modernise and strengthen its industrial base, achieve self-sufficiency in agricultural production, improve health care, enhance irrigation and power potential, and take great strides in the field of nuclear science, statellite communication and oil exploration. Less well known, although no less important, is the fact that the class base of higher education has also been considerably broadened. Higher education has now spread among women in the rural areas and also among scheduled castes and scheduled tribes. It has thus provided vertical mobility for several suppressed groups and created new workers and a new type of leadership which did not exist before. It has also made a significant contribution to the strengthening of democracy and to the more efficient administration of this vast and complex society. It has promoted Indian languages and helped the growth of several social, political and economic forces which have enriched the quality of our national life.

While an acknowledgement of the achievements of higher education in the country is only fair, it should not make us blind to the problems that afflict our higher system of education. Today, almost four million young men and women are undergoing higher education in the more than 150 universities and 5000 odd colleges in the country. However, of them, almost 80% are trying to obtain degrees in general and non-technical education, as the possession of any degree is a *sine-qua -non* for entering the job market. Unfortunately, the type of education which results in these degrees in the field of general education, does not equip our youth with the necessary tools for entering the job market. In fact the overall scenario of higher education in the country does not present a very cheerful picture. One finds that a large number of our universities are infected with the problems of declining standards, admissions not being done on time, academic sessions disrupted, time tables not being adhered to, examinations getting delayed, mass copying in examinations and indiscipline among the student body. Of course, we also have academic institutions of excellence in this country which are comparable to the best in the world, but these are a few islands of exception in a general sea of mediocrity; and these no longer determine the national perception of the present day quality of higher education. This automatically leads to the question of what should be done to ensure that our system of education is able to achieve the desired goals. I shall

take the liberty of suggesting some measures in this direction.

We will have to ensure that the 10+2+3 system of education becomes successful, so that most of the young people are diverted into the job market after the plus 2 stage; and we are able to ensure that only such of our young people enter the field of higher education, as have the aptitude and the competence to pursue the rigours and discipline of higher level of thinking. This would necessitate the introduction of systematic and well planned programmes of vocational education immediately after the secondary school stage so that students could be prepared for identified occupations spanning several areas of activity. It would also be necessary to expand our programme of non-formal secondary and higher education to meet the needs of those who desire to have further education, but are unable to get admission to full-time institutions for various reasons.

The examination system would also have to be reformed. The present examination system with its emphasis on covering the syllabus from the examination point of view, severely circumscribes innovation, analysis and independence of ideas among both the teachers and the students. It thus hinders their intellectural development and directs the entire academic life into an effort for preparing for the examinations only. Of late, the examination system has also become afflicted with disease of mass copying and associated ills. Examination reform will, therefore have to occupy top priority in any scheme of improving the education system.

I would now like to say a few words about relating education to employment opportunities. While there can be no dispute about the laudable role of education, it has to be recognised that most people have in their mind suitable employment as their ultimate goal. While planning and managing education, therefore, this practical aspect will have to be kept in view. There has to be certain interaction between government and other agencies who provide employment on the one hand, and universities and other educational institutions who turn out educated youth on the other hand. The Departments to be set up, the types of courses to be run, the number of students to be turned out, the skills and standards required and so on, would depend to a considerable extent, on the opportunities available for employment, after leaving the colleges/schools. I understand that in one of our States, perhaps Rajasthan, such an interaction exists. It is for your consideration and that of the governments of the States, whether such interaction should not be a normal feature in all the States.

One of the major problems being faced by some of the universities, is indiscipline. This extends to teachers, students and non-teaching staff. It goes without saying that it is the teachers who have to set an example of a constructive and disciplined approach to all their problems. I am aware that they are faced with a number of problems, such as promotions, transfers, service conditions and so on, and accept that the government/university should promptly attend to these : but as I said, in the larger interests of the nation, they will have to be an example worth emulation to others. As far as students are concerned, let us endeavour to keep them out of politics and make them concentrate on their studies. There will be plenty of time to indulge in politics, after they complete their studies and attain adequate qualifications for employability. With the reduction in the age for voting, this is all the more important. As far as their legitimate problems are concerned, the university authorities must endeavour to resolve them, before they assume an agitational form. While on this, may I also suggest that some system of student-counselling with regard to further studies, employment and so on, may be set up in every university, if not every college. As for the non-teaching staff, their legitimate needs, will naturally have to be looked after.

There can be no doubt whatsoever that education plays a vital role in national development and progress. Keeping in view the needs of other crucial sectors of the nation, it has to be seen as to how the essential requirements of the education sector can be met. It is in this connection that you experts will have to determine as to what is considered to be essential. Hard decisions will have to be taken on the question of proliferation of schools, colleges and universities, on the various departments to be introduced in universities, on the question of organising conferences, seminars, tours and so on. There is always the problem of consolidation and quality, vis-a-vis, expansion and dilution of standards. Equally, it is necessary that governments on their part, meet the essential requirements of educational institutions once established and ensure regular flow of the requisite funds.

All the issues raised above lead to the question of resources. How are we to ensure that in a developing country like ours where priority sectors are always going to compete with the social sectors for scarce

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UNIVERSITY FINANCES
Search for New Perspectives

D.M. Nanjundappa*

University finances have now become so ubiquitous a phenomenon that there seems to be nothing new to be conceived or argued about. Yet, the recent trends in the growth of universities, explosion in student enrolment, poor maintenance and declining standards, compel one to search for fresh perspectives. The major concern is about the State universities which face severe financial constraints and even financial crisis. The loss of financial credibility has its repercussions on the academic morale and vice-versa. The problems are more varied and complex. A vicious circle is created affecting the credibility of universities. This paper tries to discuss a few major aspects of the financial drought or famine and confines its focus on the State Universities.

Financing Mechanisms

Broadly, the financing mechanism has two facets. One is the arrangements made by the Central and State Governments for giving financial assistance to colleges and universities. The other is the method of defraying the costs of education which are to be met by the students or the beneficiaries. The present system is one of highly subsidising higher education through a system of grants to colleges and universities, apart from instituting of scholarships for meritorious and poor students. I shall concentrate on the large issue of the desirability or otherwise of the method of meeting expenditure on higher education by means of grants to colleges and universities.

The demand for higher education, as evidenced by ever increasing enrolment, seems to have no signs of abatement and facilities for higher education have to be increased to meet the growing demand. Equality of opportunity also demands that no one with ability should be debarred from university education merely on poverty considerations or poor financial backing. Government has to play its part in meeting this situation since it is inconceivable that private sector would provide finance for all desirable types and quantum of education. Governments, both at the Centre and States, are facing severe financial constraints and per capita grants both from UGC and State Governments have generally declined considerably in recent years. It is doubtful under the system of priorities adopted in the National and State Plans, whether they would be able to provide adequate funds to meet the demands of higher education in the desired manner and on the required scale. Under the circumstances, universities have to face financial problems which have their bad effects on the quality of education and ultimately may defeat the very purpose of higher education. Hence the search for a system of educational finance which is more equitable and reduces the draft on scarce resources of the Government. Even assuming that the present system of financing through grants from the University Grants Commission and State Government to universities, would be able to provide all the finances for meeting the increased demand for higher education, it cannot go unquestioned on grounds of autonomy and equity. It may be noted that the recent proposals for reform of higher education are in the direction of having greater control over universities. This is inevitable if universities depend on the grants upto nearly two-thirds or more of their needs. Accounting patterns and methods of planning buildings and other capital development are already in tune with government procedures. Given the likely increases in university expenditure, the present indications are that the degree of control will get tightened rather than relaxed. The tightening of control over universities results in waste of time and energy by the university authorities in getting the financial sanctions as is already happening. The root of the trouble is excessive financial dependence of universities on the State. They have to argue with the University Grants Commission and the State Government; the UGC has to argue with the Central Ministry of Education and Ministry of Finance. The procedure is time-wasting in the extreme. When it is applied, not only to major issues but also to relatively minor matters, the burden of decisions thrown on those at the apex is intolerable. When a national economic crisis develops, as it happened around 1973-74, the procedure seems to come to a breaking point. If the control

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is extended further, universities will become another Government department.

Before we proceed further with this analysis, let us briefly recapitulate how the present system of State Government grants to Universities has worked.

Determinants and Periodicity

There are two main systems : (a) the deficit grant; and (b) the block grant which may be statutory, adhoc or based on past expenditure. Under the system of deficit grants, the annual maintenance grant is given on the basis of estimated approved expenditure minus the estimated approved income, subject to adjustment in subsequent years on the basis of actual income and actual expenditure as revealed by audited accounts. This procedure creates some problems. For instance, State Government can disapprove certain expenditures. If sudden cuts in the grants are made by the State Government due to some reason or the other, it will be difficult for the university to create a small post or incur a small expenditure without the approval of the government.

The system of block grants being comparatively flexible, are preferable to deficit grant and gives more autonomy to the University. Two ingredients of a block grant are (1) the basis of fixing the amount; and (2) the frequency of revision. With regard to the basis of fixing the amount, some governments fix the amount on the basis of past expenditure which does not allow for normal increase in expenditure of a university. Some states allow for an automatic increase at a specific percentage. Difficulties arise here because of unforeseen expenditures. With regard to the frequency of revision, there are variations in practice. If the amount of block grant is made statutory in the University Act, the system becomes inelastic; the grants become fixed for years and the development of the university is retarded. The non-plan block grants are revised sometimes triennially and sometimes quinquennially. But in a majority of cases they remain unchanged for longer periods.

Over the years, certain factors external to the university have manifested and, therefore, they have no control over it. This in turn creates problems for the university finances. For example, in any given State, the setting up of a large number of colleges either in the government or in the private sectors takes place under political compulsion, but not necessarily on academic considerations. To take care of this, at the university level, there will have to be an expansion of the university apparatus. Since residential universities become expensive, there is a tendency for multiplying the affiliating universities. Within a university again, the postgraduate centres are established with a view to catering to the neglected regions but these often become political decisions and this in itself becomes the seed sown for the establishing of more universities within a short period of 4-5 years. Therefore, expansion takes place in a break-neck speed and under the garb of meeting the demands of representatives of the people, the objective of maintaining the university ideals is thrown to the winds. Some idea of this expansion can be had from the fact that the total number of colleges increased from 4886 in 1981-82 to 5723 in 1985-86 in the country. The percentage increase each year over the preceding year by one stage rose over 153% in 1982-83 to 344% in 1984-85 and over the period 1982-86, the increase was 837%. It is, therefore, obvious with such an expansion, the university finances have been experiencing a trauma as it were, with their number going up from 21 in 1984 to 160 by now.

In this context, the State Governments have to accept the responsibility for funding of the colleges under the grant-in-aid and also of the universities whose responsibility is fully on their shoulders. Unfortunately, the trends observed in the diversification of courses, the need for better libraries, equipment and related infrastructure, achieving of a favourable teacher/student ratio, replacement of obsolete equipment and providing of the latest equipment for research purpose, commensurate facilities for students and for proper conduct of examinations, never enter into the financial mechanism. Even in the matter of salaries of teachers, the State Governments drag their feet for years even to accept and implement UGC scales of pay while their counterparts in non-university administration get their new scales and arrears within no time from the day of announcement of the new dispensation. It would not be wrong to say that it is this indifferent attitude which has caused the deterioration in the university credibility to a large extent.

Negligence of the State

The major difficulties arise due to little interest evinced by the State Government in ensuring the efficient functioning of the universities. While on the one hand, they allow the growth of institutions,

they do not realise that an apex body like the university has to be suitably strengthened if it is to supervise the institutions, conduct examinations properly and maintain standards. For pursuit of excellence in research, equipments will have to be replaced and more chemicals become necessary. More of exchange of researchers is necessary. This is an area where there is a vast difference between the university and other departments of the government. Whenever some financial constraints are faced, it may be possible in other departments to stop an activity like development work with less serious consequence. But in an university, the teaching and research will have to go on; chemicals have to be used. This cannot be stopped. Of course, the matter is different when it comes to less-priority development works in an university. Maintenance component is the major aspect in university expenditures while development cannot be ignored. State Governments seldom attach importance to it. They should realise that if they cannot maintain the universities properly, they should decide closing them down rather than perpetuate a deteriorating system.

It is not infrequent that the government tries to squeeze the university finances when it finds that the university does not toe the path dictated by the Government on considerations other than academic. Quarterly release of funds get held up. Towards the maintenance grants whatever be the magnitude of the salary and the maintenance expenditure, partial releases are made, often on a monthly basis in some cases. The result is several universities are driven to borrowing much against the provisos of the Act, paying unbearable interest to the banks. This cannot continue for long without heading for bankruptcy.

Therefore, one crucial factor here is that of determining the growth rate which should be applied for the sanctioning of the maintenance grants. So far no attempt has been made to assess the replacement needs in the universities in the matter of laboratory equipments, the library equipment, etc. Adhocism rules the roost. Some universities are given a rise of 3% and some other may get rise of 7% or a little more or little less. What is to be noted here is the lack of a rationale in determining the growth rate which should be adopted for the revision of maintenance grants. It is, therefore, suggested that a detailed study should be made by the universities about the replacement needs and also about their growth of expenditures, and developing 'norms' instead of accepting an adhoc, arbitrary figure. With the growing complexities in higher education expenditures, these norms have to cover average per capita expenditures for different categories of students and researchers. There is the average per institution expenditure when it comes to affiliated colleges and single discipline faculties. Based on such criteria, per capita system of grants can be considered.

Pending the developing of norms, about 10% growth rate which appears to be the observed trend based on available data should be accepted by the State Governments. Also, the universities must be saved from the humiliation of waiting at the Departments of Education and Finance to get monthly release or quarterly release. There should be a calendar for quarterly releases of the maintenance and development grants and on that given date the funds should be released.

Amendments to University Act

On a general look at the different sections of the University Acts of different States, one is struck with the clause under the chapter on Finance and Accounts. It is generally stated that the amounts received from any one of the following sources shall form part of university funds :

Any contribution or grant made by the State Government. This would show that there is no statutory commitment on the part of the Government to accord the necessary priority in the fixing and release of funds. Again, there is no mention of the periodicity of revision in several cases. This contributes to the sad state of affairs. Therefore, the periodicity should be fixed as five years dovetailing with the Five Year Plan frame and should be introduced as a distinct clause in the University Act in the Chapter on Finances. If the universities are to maintain their self-respect and autonomy, the old clauses shall have to be replaced by mandatory clauses. The Acts will have to be amended to provide for the above in the interest of proper functioning of universities.

Yet another issue which is causing considerable concern to the universities is the method of financing by the University Grants Commission. In the past attempts have been made to modify the pattern. There are two issues here. One is the proportion of financing particular items of development activity and the second is the proportion of funding revision of salaries of teachers.

In the case of developmental activities excluding salaries the proportion in the past has varied from 50 per cent to 66-2/3 per cent or 75 per cent. Only in certain cases like books, etc. there is 100 per cent assistance. In the case of revision of salaries the proportion has varied between 80 per cent and 100 per cent and now has again gone back to 80 per cent. This author had argued in one of his books 'Working of University Finances' published a few years ago that in order to make the universities sound in their finances, it is absolutely essential about 100 per cent assistance is given by UGC instead of 80 per cent or less. Unfortunately, the conflict between the Centre and the States surrounding their financial relations has cast its evil shadows on the university finances also. Consequently, for several years the State Governments refuse/delay to accept the recommendations for salary revision. One can understand the reluctance of the Centre as long as education was put in the State list. Now that education is put in the concurrent list, it is not clear as to why cent per cent is not given for the revision of the salaries.

Universities also experience several obstacles in the matter of release of funds from the UGC. In the first instance, determining of the UGC assistance under a Five Year Plan itself gets delayed by one or two years or even more. It has repercussions on the university in so far as it is not possible to ensure a proper meshing of the State contribution to the UGC contribution and also for the transfer of expenditures from the UGC to the State Government accounts at the end of the five year period. UGC will have to streamline this procedure and determine the university plans well in time and see that the releases are made in a manner which would not lead to halting developments in the university.

Selective Borrowing

In order to overcome the financial difficulties encountered by the universities suggestions have often been made that universities should be empowered in the Act to borrow from other sources. While this can be a welcome feature, certainly there are limitations. No bank will be willing to give a loan to the university since an university is not an income earning or a surplus generating institution. Again, once the borrowing proviso is there, one does not know how prudently the privilege will be utilised by the university. It is not improbable that the autonomy in this sphere may under local pressures run riot and push the university finances to the brink as it were. On a sober consideration, without going into the details of the consequences of borrowing on the general financial and inflationary situation in the country, it could be argued that there must be provision for borrowing for such items of activity in an university which partake the nature of a commercial nature. For example, there is no reason why an university printing press should not borrow funds to finance its programme. In the absence of its own printing press, the university will be compelled to pay to the private printing presses at the market rates apart from running the risks connected with maintenance of secrecy. Very huge expenditures are incurred on printing of books. The same amount can be utilised for repayment of loan and in the case of books one ought to follow the rule of cost-plus pricing excepting rare publications for which a subsidy is desirable. Similarly, housing is another area where borrowing should be permitted. If the Government can borrow from financial institutions on a massive scale for the housing programme, there is no justifiable reason to prevent an university from borrowing for housing. It is a capital expenditure which should be met from funds coming under the capital account. In the case of many universities, the Act comes in the way. For example, HUDCO is willing to lend funds for the universities for the housing programme, but have desisted doing so because the Act does not provide for it. Therefore, one would urge amendments to the Act permitting the universities to borrow selectively for certain specific purposes like those listed here so as to ease the financial strain on the universities and indirectly on the Government.

The Test of Equity

We shall now examine how satisfactory is the present method of direct grants method of financing universities. At present most of the State Universities get the budgetary allocation from the State Government to meet their expenditures after taking note of the various receipts most of which are inelastic. The major source of income to the university is the fee as already mentioned. The fee income forms about 10 to 12 per cent of the total expenditure of an university. Due to the political overtones that accompany any fee revision and the possible utilising of this opportunity for creating unrest by the vested interests, no university is in a position to raise the fee. For that matter the governments will have to take a joint decision with the universities if they are to bring about any revision in fee which is now fixed at an incredibly low level, unrelated to equity and rational resource allocation. This has made the

students develop a feeling of utter indifference towards their obligations to the university when they come for their studies and to the society when they get into it. It is astonishing that such an important issue is swept under the carpet notwithstanding a pioneering attempt of this author to bring this matter to the forefront nearly 13 years ago[1].

It is universally recognised that expenditure on education is an investment whether it is administered by private sources or public sources. Universities meet nearly two-thirds of their expenditure from grants from the State Government and UGC. The fees paid by students finance the remaining one-third of its expenditure. This system of financing through 'grants' involves a net transfer of income from the rest of the community to those enjoying university education. It is very difficult to know precisely on whom this burden rests. In so far as more than 80 per cent of tax revenue of Central and State Governments are contributed by indirect taxes, the burden is spread over the masses and not merely on the richer class. What is, however, clear is that a university student, who benefits from this arrangement, at no time later in his life pays more in tax than other receiving the same income. The system leads to redistribution of income in favour of the university student. It might be argued that taxes are levied on the rich and it is quite equitable to pay poor students out of this tax revenue. As already mentioned, it is extremely difficult to say who bears the burden of this transfer. It may be a transfer from the rich to the poor or quite the reverse, if uniform fees with indiscrete subsidies inherent in the existing method and indirect taxation are considered.

Returns to Education

Apart from this, it is known for certain that returns to higher education are higher and a large number of university graduates are in lucrative professional business or administrative service. There are also among university graduates those in low income groups like school teachers, clerks, etc. Although comprehensive studies on the returns to different levels of education, viz., primary, secondary and university education and on the job training are extremely limited in India, available data on the pattern of employment and earnings prove that earnings of people with university education are higher than those with primary and secondary education. Even amongst those with university education, monthly earnings of persons vary with the different examinations they have passed, the highest being generally found more in the case of technologists and medical workers.[2]

Allowing for the possibility of earnings for people with lesser qualifications to improve with the length of service and opportunities that accompany, the data seem to show that earning capacity of degree holders in science and medicine is higher than the holders of degree in Arts, Law or Education.[3] Therefore, it seems highly reasonable that the lifetime earnings of graduates are substantially high compared to the majority of others who have no university education. In so far as this is accepted, there is no clear cut equity argument in favour of the grant system of financing universities.

When distinct benefits do accrue to individuals from higher education financed through government grants, cognizance should be taken of them in determining the method of financing higher education. It is argued in some quarters that indirect benefits from higher education to society are also very large[4], and since the benefits of university education are diffused throughout society, it is the community as a whole which derives any economic benefits and not the individual concerned. On this ground, it is maintained that the lifetime earnings are not likely to be greater as a result of university education and so there is no contravention of the benefit principle by the grant system of financing university education. The argument that indirect or social benefits or returns to education are greater than private individual benefits seems unexceptionable. What is important to note is that extensive work conducted in the U.S.A. by Schultz, Becker and others has clearly established that lifetime earnings are considerably influenced by the amount of higher education. Further, there are not merely the financial returns; there are other benefits such as greater range of choice of opportunities, greater security, etc. The monetary and non-monetary benefits get localised in the individual. Consequently, the present system of grants to universities cannot easily be reconciled with the benefit principle.

Carter and Williams[5] in their evidence to the Robbins Committee on Higher Education in England argued that the cost of higher education should lie where the primary benefit lies; that subsidies should be explicit and not concealed and that since the primary benefit of university education is to an individual student, the cost should be recovered from him in the form of fees. Because there is secondary benefit to the community, it was to share a portion of the burden. However, major portion has to be shared by primary beneficiaries.

Stephen Merret[6] sets out principles for governments to adopt in directing the money flows, reciprocating the cost and benefit. He describes the process of education in a highly stylised fashion. It is to be noted that unless our education policy of encouraging large enrolment for higher education on sentimental grounds is not halted, there is the danger of already deteriorated standards leading to eruptive movements of educated unemployed. It is surely not an efficient method to waste scarce resources on turning out half baked double graduates, if they are to take to openings for which graduates and sometime undergraduates would have sufficed. Meritocracy makes good economic sense. When once we accept the meritocratic approach and production of bundle of skills, i.e. qualified manpower which is an economic good, we have to accept the principle of charging the beneficiaries. The lower the per capita income of a country the greater is the marginal utility of income and therefore the need to establish an economically efficient education system is all the more pressing in a country like India. Thus judged, the present system of financing higher education through grants does not score well either on equity or on benefit principle. The balance of argument is in favour of bringing about a closer alignment between the costs of education and price, students pay in the form of fees. This is not to suggest that universities can and should behave exactly like business firms aiming at a close balancing of marginal cost and price for each product. There are a number of reasons why this should not and cannot happen such as divergences of social costs and benefits from private cost and benefits, the difficulties of sorting out costs when many products are jointly supplied in the form of differing courses and in the combination of teaching with research. However, it does suggest that it is rational to use some form of pricing in university finances. Its introduction can lead to better allocation of resources both financial and manpower. For example, if the price of securing scientific services is very low compared to the cost of providing them, private industry and others may demand more scientists than required thereby leading to misallocation of available resources. On the other hand if the fees for different courses conform more closely to the costs of supplying them, it may lead to better allocation of manpower. It may be argued that closer alignment of costs and fees may divert students from some courses to others in such a way as to conflict with the national interest. Such a situation only suggests the need for subsidy to particular types of courses at appropriate points. A known and selective subsidy would produce better social allocation of scarce resources than the present concealed and indiscriminate subsidy.

Costs and Fees

Another aspect to which attention should be given while talking of closer alignment between costs and fees is the economic efficiency of university activities. A university may not be working to full capacity and there may be waste of the capital equipment. By making it work to capacity, would it not be possible to minimise the cost of education? Or is it impossible to avoid a situation where costly buildings and equipment are only half utilised ? What are the implications of full capacity utilisation? If in an academic year, lecture and laboratory times were rearranged and student numbers increased to increase load factors in classrooms and laboratories, this would increase shortages in staff, offices, libraries and other student amenities. If the staff is asked to do more hours of teaching, quality of teaching may suffer and this is not an ideal solution and also not costless. There is also a problem of amenity which has a powerful influence on the ability of any university to recruit high quality staff and attract good students. The increase in university population would increase amenity gap. Shortage of hostel accommodation for students and quarters for staff members develop because of the increase in the university population. Teacher-student ratio which is one of the norms for measuring the quality of education will worsen. So in the interest of education, enrolment is to be restricted to availability of amenities.

Better and fuller utilisation of available buildings and equipment is possible. Experience of the U.S.A. suggests that this can be attempted without sacrificing standards. For example, scarcity of lecture halls is a problem in many universities in recent years. If the same working hours are continued, universities need some more lecture halls. But by proper staggering of time-table and having unified control over lecture halls, it is possible to meet this problem effectively without bringing down the standards. New buildings can be made more functional with careful and proper planning at the time of construction. Close alignment between costs and prices improves efficiency in some of these activities. If the universities find it difficult to get students because of high operating costs and the resulting high fees, they will be forced to be efficient and make better use of the available resources.

Loan Finance : An Alternative

Revision of fees to reflect the real cost need not pose great difficulties provided the issue is taken up together with a change in the method of financing universities. This method is one of governments allocating the grants presently given to universities to students directly and in turn make the students pay the full cost of their education out of such funds to the universities. Under this system, sums of money are made available from public funds as a loan to all potential students with the necessary academic standard belonging to low income groups on the condition that they enter into a contract to repay the loan without interest after they obtain the earning stage, in instalments spread over average earning span of their life.

Should the loan be given to every prospective student with minimum educational standard or should it be confined to the students with poor parents is a matter that has to be decided keeping in view the objectives. We have to expand the facilities for higher education and it is improbable that the State would be able to find all the funds required without reducing priority investment elsewhere. Under the present fees structure, which covers about 10-12 per cent of the total academic costs, there is unjustifiable and indiscrete subsidy. As for the poor, the scholarships and freeships given cover only a fraction of the student community. This leaves behind the bulk of the students with poor parents who have to either give up educating their sons and daughters because of personal financial problems or borrow at usurious rates of interest to finance the education of their children. The subsidy in the present fee is no answer to the problem of enabling poor families to send their children for higher education.

In so far as a very low level of fees obtains, the demand for higher education is more. Those who cannot benefit from higher education are in no way restrained. For the rich, it confers a big subsidy which is inequitable; for the poor, it has no incentive in itself to make the students serious about education.

Viewed in this manner, we feel that an indirect system of financing by interest-free loans to cover the full cost of education (both private and public) to prospective students with prescribed minimum academic standard should be adopted. It may be extended to students whose parental income is below a certain limit (say about Rs. 36,000/- per year). A scheme of this sort makes funds available to those who need them and the inherent characteristic is that an essential unit in the transaction is the student himself rather than his family. Repayment of the loan is tied to the students own earnings, although eligibility for loan is decided on the student's individuality. The income ceiling is intended for keeping out the rich from this system. This is only to restrict the demand for funds. At the same time, it is not unreasonable to think that the rich will have little interest in a repayable loan in so far as they have high income and disposable wealth. The equity principle would also demand that the rich need not be subsidised by giving an interest free loan.

The greater merit of the proposal is that it does not require extra funds for the government. The same funds which are now given to university to meet the full cost of university education will now be reaching the university via the student/student fees as full cost. Moreover, the student gains the strength of dignity and responsibility and shall be made to realise his obligation to society. Resources become available for recycling in the education sphere.

To administer a scheme of loan finance of the type mentioned in the foregoing paragraphs there may have to be an appropriate mechanism developed in the educational sector. Institutional finance and the institutional financial structure have, by now, been well established in the country. The commercial banks have total deposits of more than Rs. 1,25,000 crores. They have more than 52,000 branches in the country. Apart from these, there are the long-term financial lending institutions. It should not be difficult to evolve a new mechanism using these for the administering of the scheme. It is suggested that in each State an Educational Finance Corporation should be set up to administer the scheme. No doubt, this will be a service corporation and therefore not a profit making one. Its task shall be to receive the funds out of the budgetary allocation from the State Government meant for the universities, to raise educational funds from other sources wherever available, accept donations, etc., and lend money to the students for their education. The repayments by the students are to be collected by these corporations. It will be noticed that when the recovery starts, there will be an augmenting of the funds for the educational sector. The Corporation can have divisional offices for the sake of convenience in administration. The banks may give loan direct to the students or alternatively the banks can route

their payments through the Educational Finance Corporation. For a commission, the commercial banks can also accept the responsibility for the distribution of loans through their branches and also render the service of monitoring and collection. On the whole, there seems to be no unsurmountable difficulties in the implementation of such a scheme.

In short, it is felt that to meet the ever increasing demands of higher education, the present system of financing colleges and universities through grants by the Central and the State Government should undergo a change. The university product, who is the main beneficiary of higher education, derives greater returns which are personal to himself and thereby get localised in himself. From the view point of equity and optimal allocation of resources it would appear that there is a strong case for substituting the grant system by a system of loans to the students coupling it with adequate number of freeships and fellowships for the meritorious and for those with lower incomes. With such an approach, a proper cost-price alignment can be achieved in higher education eliminating indiscrete subsidies. It is surmised, such a change in the financing mechanism can also provide automatic signals for those who intend investing in higher education and that higher education can become self-financing with greater autonomy for universities which is now getting greatly eroded.

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6 Stephen Merret, "Student Finance in Higher Education" *The Economic Journal*, June 1967, pp. 286-302.

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NOTIFICATION FOR THE CONVOCATION—1989

The First Convocation of the Indian Veterinary Research Institute (Deemed University) will be held on Saturday the 9th December, 1989 at 11.30 AM at I.V.R.I., Izatnagar, Dist. Bareilly.

All those who have passed final examination of Ph.D./M.V. Sc./M.Sc. degree programmes of the I.V.R.I. (Deemed University) and have completed all formalities are invited to receive their degrees. They are requested to send their willingness to the undersigned to attend the Convocation latest by **20th November, 1989** indicating their name, roll number, name of the degree programme and date of completion thereof, mailing address, etc.

The rehearsal will be held on 8th December, 1989 in the afternoon and recipient of degrees should attend positively. The entry into Convocation Hall will be strictly on the basis of **Invitation Card.**

REGISTRAR

Financing the Agricultural Universities in an Era of Budgetary Constraints

Har Swarup Singh*

Introduction

With the goals of scientific development of agriculture, Agricultural Universities were established in almost all the States of our country during the 60s and onward. The universities have helped the country in achieving self-sufficiency in food and bringing about white revolution as well.

Agriculture and Animal Husbandry are vast fields and encompass around three-fourths of the total population. The universities are not only fulfilling the assigned task but also exerting to identify the regional problems and directing their resources and thrust accordingly.

For achieving the objectives the universities generally meet their financial requirements mainly from the following sources :

(i) Grant-in-aid from State Governments under Non-Plan (Agriculture and Animal Husbandry Heads).

(ii) Grant-in-aid from the State Governments under State Plan Agriculture Head.

(iii) Grant-in-aid from the Indian Council of Agricultural Research and other agencies.

(iv) Mobilisation of internal resources.

Financial Constraints

The need of augmentation of budgetary resources of the agricultural universities was felt during the late 1960s and the National Commission on Agriculture was established which recommended as under :

(i) The State Government should fix block grants in the university making the practical and realistic assessment of requirements of the funds for efficient management of its programme for a period of five years giving complete freedom to the university to regulate expenditure within the grant without any precondition. An automatic annual increase of 5-10% in block grant should be allowed on the previous grant for normal rise in almost all the previous expenditure.

(Chapter No. 53, Recommendation 34)

(ii) 10-20% of the total plan outlay under the agricultural development programme should be earmarked in the State budget for agricultural education and research

(Chapter No. 53, Recommendation No. 36)

These recommendations still remain to be implemented by a large number of State Governments including Haryana.

The issue regarding funding of State Agricultural Universities was also dealt with by an ICAR Review Committee under the chairmanship of (late) Dr. M.S. Randhawa, during 1977-78. This Committee had, *inter alia*, recommended asunder :

(i) "The State Governments should give liberal grants both for development and maintenance for the proper growth of agricultural universities. The level of funding for agricultural universities should be ten to twenty per cent of the State Plan budget for agriculture as recommended by the National Commission on Agriculture....

(ii) The principle of block grants (to be reviewed every five years) should be followed by the State Governments while releasing grants to the univesities with provision for annual increase of five to ten per cent. Within the block grants the university should have full freedom to regulate expenditure....

(iii) The State Government should also provide a foundation grant of one crore rupees to the university to meet the expenditure on approved activities pending normal release of funds .....

(iv) The net income derived from the farm should be retained by the university for meeting non-recurring items of expenditure where the State Government does not finance the maintenance expenditure of the farm. In other cases the income over and above the average income

[*Paper presented at the 64th Annual Meeting of the Association of Indian Universities held at University of Kashmir, Srinagar*]

**Vice-Chancellor, Haryana Agricultural University, Hisar.*

from farm (based on the last three years' average) should be retained by the university."

These recommendations also remain to be implemented by most of the State Governments, including Haryana with the result that the university continues to face acute budgetary constraints.

Budgetary Constraints

The agricultural universities are facing budgetary constraints of various kinds as explained below :

As per approved procedure, the budgetary requirements of the next financial year under these heads are submitted to the State Government in the shape of Schedule of New Expenditure (SNE) in September/ October every year after scrutiny of the demands projected by the departments of the university and allowing only some percentage increase on merits, keeping in view inflation, hike in wages, consideration of economy and budgetary norms. The demands raised by the various departments of the university are thus critically examined and, after approval by the Vice-Chancellor, the minimum requirements are projected to the Government. However, even these are subjected by the State Government to heavy cut leading to sizeable reductions. The following data in respect of Haryana Agricultural University will make the position clear :

Year	Amount demanded as per SNE (after internal scrutiny)	Amount sanctioned	Shortfall	Percentage reduction
	(Rupees in lacs)			
87-88	966.22	778.45	197.77	20.46
88-89	1106.77	879.65	227.12	20.52
89-90	1262.34	1029.36	232.98	18.45

In fact the increase allowed by the State Government is mainly under Pay & Allowances, with insignificant increase in contingent allocations. Essential requirements have to be adjusted internally by applying percentage cuts on allocations for salaries and other expenses, by keeping posts vacant and deferring/reducing even essential expenditure.

After the financial requirements have been projected and allocations conveyed by the State Government for next financial year, there is generally inflation of 10% besides enhancement of salaries on account of payment of dearness allowance instalments, etc. Thus the intrinsic value of the amount provided gets further eroded.

The position gets aggravated even more after approval of the budget estimates when the following kinds of committed expenses not provided for in the budget have to be met :

(i) Sudden increase of telephone and electricity tariff not only prospectively but sometimes retrospectively also. Non-payment of such tariffs can jeopardise the functioning of the entire system.

(ii) Increase of rates of dearness allowance, wages, fellowships and stipends for students, press advertisements of admissions and recruitment notices, and increase in the cost of extension education publications, etc.

(iii) Payments on account of leave travel concession which cannot be accurately forecast at the time of budget estimates and even where these are projected adequate funds are not provided.

(iv) Normally no allocation is made by the Government for renewal of old equipment, leading to excessive expenditure on maintenance thereof.

(v) Adequate funds are not made available for maintenance of buildings and other assets created in the 1960s and early 70s which require increasingly more repairs. Adequate maintenance of these buildings is economical in comparison to construction of new buildings These buildings can be kept in good condition if more attention is paid towards proper maintenance thereof. It is imperative and financially prudent to invest more on proper maintenance of existing assets than on new buildings

(vi) The State Government liberalises service benefits such as introduction of a Group Saving Linked Insurance Scheme, washing allowance, cycle allowance and uniform allowance, etc. These benefits have to be provided to the university employees also as per the following recommendations of the 4th Convention of the Association of Indian Agricultural Universities held in 1973 and policy decision of the Board of Management :

> "Whenever State Government increases rates of Dearness Allowance, Interim Relief, House Rent Allowance, T.A., etc.,

additional ad hoc extra grant should be given to meet the increased expenditure of the universities on this account."

But whereas the additional grants are normally not provided, the expenditure involved has to be met out of the existing allocation by slashing allocations for development and operational expenses of the university. It affects the working adversely.

(vii) Sometimes allocations already approved by the Government are subjected to sudden cut at the fag end of the financial year thereby creating a lot of problems and complications.

(viii) Bus, railway and air fares are increased occasionally but allocations under T.A. are not proportionately increased, obviously due to financial constraints of the State Governments. The immediate requirements of travel expenses for participation of teachers/scientists in conferences, seminars and other research and extension activities have either to be curtailed or met by internal reappropriations which hinders the achievements of approved objectives.

(ix) Decretal amounts and court/legal fees have to be paid which are not foreseeable, by internal adjustments, adversely affecting the approved programmes.

Constraints under State Plan Head

Provisions under this head are not made adequately as per the recommendations of the National Commission on Agriculture reproduced in para 2.1. On the basis of the recommendations of the Commission 10-20% of the total plan outlay of the State for agricultural development each year should be earmarked for agricultural education and research. A comparison of the grant due to Haryana Agricultural University as per this recommendation and the amount actually provided is asunder :

Year	Plan outlay of Agril. sector of Haryana State	Amount due @ 10% to 20% i.e. 15% average	Allocation actually made	Short-fall
	(Rupees in lacs)			
87-88	7492.00	718.80	300.00	418.80
88-89	5346.00	801.90	380.00	421.90
89-90	6549.00	982.35	425.00	557.35

The above data will show that the allocation made has been even less than 50% of that envisaged by the National Commission on Agriculture.

Even the allocations recommended by the State Government and approved by the Planning Commission are not made available to the universities. It will be clear from the case of Haryana Agricultural University for whom allocation of Rs. 2400.00 lacs was approved for the 7th Plan but actually Rs. 1770.00 lacs only have been released in the VII Plan period. This has hindered the envisaged progress under Plan Schemes.

As in the case of Non-Plan head, sudden cuts are imposed on Plan allocations and financing of the approved items becomes extremely difficult.

Restrictions are imposed on filling of posts provided in Annual Plans. This results in non-availability of the required manpower and impedes the development/expansion contemplated in the annual plans. The universities should be free to fill posts provided in their Annual Plans.

Constraints in respect of ICAR financed Schemes

The universities face the following constraints in implementing the projects financed by the Indian Council of Agricultural Research (ICAR) :

(i) Budgetary allocations for posts are made in the ICAR financed projects at the beginning of each plan, at the initial of the pay-scale of each post. With the appointment of persons with higher basic salary and allowances, allocations get exhausted even before the financial year closes with the result that allocations have to be revised frequently. On the one hand, the staff concerned faces a lot of financial hardship, and on the other, the university has to make provisional payment from its meagre State funds. The initial budget allocations under salaries and allowances in new schemes and projects should be at the middle stage of the pay-scale of each post so that persons appointed with higher salaries do not face any hardship.

(ii) The position regarding allowances under these projects is also similar to that brought out at (i) above. The allocation gets exhausted as a result of sanction of the dearness allowance instalments. It is necessary that atleast 20%

step-up in allowances is provided for each succeeding year so that dearness allowance increases are absorbed without getting the sanctions revised.

(iii) Sanctions for continuance of existing projects are issued sometimes even after more than one year from the start of each plan. This causes a lot of uncertainty about the continuance of projects and has adverse affect on their progress.

The assistance under the head "Establishment and Development of Agricultural Universities" is inadequate. The allocation in the 7th Plan was even less than that in the VI Plan. For instance, there was an allocation of Rs. 2.17 crores for Haryana Agricultural University during the VI Five Year Plan, but the same is 1.85 crores in the 7th Plan. Actually the assistance should have been much more in view of inflation and increased requirements due to modernisation of techniques and technology and emerging disciplines.

Due to various reasons, expenditure on the items approved by the ICAR for developmental aid varies. Sometimes, there are savings under one item and requirement of additional funds for the other. The university is not free to make reappropriations of allocation within the objects approved by the ICAR due to which a lot of time and labour is wasted in correspondence with the Council time and again.

The unspent ICAR Development Assistance as on 31st March of each year can be spent in the following year only after its revalidation by the ICAR. The process of revalidation involves supplying of figures upto the close of the last financial year, and justification for the amount remaining unspent, which takes three to six months. This delay can be cut short if the universities are allowed to utilise, under intimation to ICAR, the unspent grant-in-aid as on 31st March without seeking revalidation from the ICAR on the objects for which it has initially been approved.

Difficulties in the Release of Grants

The State government releases approved grants on a quarterly basis and the ICAR on a half-yearly basis after raising of demands by the universities. State Government grants are generally released after persistent follow-up and repeated visits to State headquarters leading to delay and avoidable expenditure on travelling allowances. The State Government should automatically release the grants due at the beginning of each quarter, in the 1st fortnight without awaiting demands and followup by the universities; and exception should be made only for the grant for the 3rd quarter which may be released after issue of Audited Grant Utilisation Certificate for the preceding year.

So far as ICAR grants for projects and ad hoc schemes are concerned, the procedure for release thereof has been revised from 1988-89 but there is one drawback, viz. deduction by the ICAR of the amounts due from the universities as per figures of the preceding year, but it does not release the amounts due to the university at the close of the last financial year in respect of various projects while releasing grant for the first half year. This results in the release of considerably less grant than actually due as per the revised procedure. This procedure should be streamlined and 50% of the approved grant for each financial year released in the first fortnight of April every year. Of course, adjustments if any can be carried out at the time of release of the 2nd half yearly grant when the requisite data in the prescribed proforma is supplied by the universities.

Similarly the ICAR Development Assistance for the first half year is released on receipt of the detailed demands and reflecting closing balance on the last date of preceding year. Collection of these figures involves considerable time and labour. This hinders the progress of work. The existing system should be streamlined by releasing 50% of the approved grant-in-aid in the first fortnight of April every year. For the second half-year, the procedure suggested in para 4.2 can be followed.

Economy and Mobilisation of Internal Resources

The universities are now almost exclusively dependent on the grants-in-aid from the respective State Governments, Indian Council of Agricultural Research and other bodies. However, keeping in view the overall financial constraints, they should augment their resources and thus reduce the financial burden of the State Governments and other agencies to the extent possible by taking the following steps :

(i) Rates of produce and services rendered by the university to its own departments and other agencies be reviewed frequently so that these are not less than those for similar services in the local market.

(ii) Revolving Fund Schemes should be created

for increasing the income of the university by having off-season crops and increasing income from various milk and animal products.

(iii) Consultancy service should be provided to the agro-based industries, and at least 1/3rd of fees charged should be made available for utilisation by the universities.

(iv) Rules and regulations of the university should be updated and widely circulated so that the scientists and other staff are well aware of the same and commit the minimum wastage, irregularities and losses and responsibility for negligence in handling the university property is easily pin-pointed.

(v) Targets of produce and income may be laid down, wherever feasible in consultation with the concerned departments and those, whose performance is upto the mark, may be given suitable incentive. This step will ultimately result in increase in the income of the university.

(vi) There is at present a virtual race amongst various Departments to have more and more of equipment. Not much attention is paid towards its use and proper upkeep. There should be a mechanism to review and reward efforts at proper upkeep and utilisation of equipment. This will ultimately reduce the need for more purchases. Besides, equipment of common use ought to be used as a central facility; this will not only ensure its proper maintenance but also eliminate unnecessary proliferation and duplication.

(vii) Expenditure on inaugural and closing ceremonies of various functions ought to be reduced by organising such functions on a modest basis. Besides, where official lunches/dinners have to be arranged, the invitations should, except on purely ceremonial occasions, not be on the basis of status only but on functional basis by restricting the number of invitees to those who are actually expected to contribute in the deliberations.

Conclusion

Agricultural universities have an important role to play in the economy, not only of the respective States in which they are located, but also of the rest of the country. Problem oriented research has to be carried out both in the laboratories and in the fields, and results of research have to be demonstrated and carried out over to the farmers. Besides, teaching has to keep abreast with the latest developments in India and abroad and attuned to the results of research. It is therefore, necessary that university finances are improved as per recommendations of the National Commission on Agriculture and other national level recommendations, and present procedure for fixing and release of grants are streamlined by removing the bottlenecks brought out in this paper. □

INAUGURAL ADDRESS

(*Continued from page 9*)

national resources, sectors like education, especially higher education, get the necessary funds as per their requirements ? I understand that this is one of the main items on which this august body is going to deliberate. I feel this is a critical element in the whole set up and this forum will have to suggest suitable ways out of this difficulty.

I mentioned that financial resources are a major constraint for our universities. This, however, should not lead one to assume that the country is not already spending considerable sums of money in this sector. In the seventh Five Year Plan the country has allocated Rs. 6,383 crores to education. Thus even now, our country is investing heavily on education and has a right to expect it to deliver results both in terms of national progress and individual advancement. This, I feel, is the challenge before all of you. Let it not be said in the years to come, that the leaders of higher education in our country were not able to provide the necessary leadership at the critical juncture, for attaining the national goals.

Before I end, I would like to commend the excellent work being done by the Association of Indian Universities. Apart from its normal function of acting as a link between the universities and the government and also between the universities and assisting universities in various respects, it has been contributing a great deal in shaping the new educational policy, as well as in its implementation. These annual conferences themselves, which present a suitable forum for all the Vice-Chancellors to get together and discuss various matters of common interest to the universities, are no doubt proving to be extremely useful. Apart from this, the publications brought out by the Association particularly the *University News*, help people in keeping abreast with the latest developments.

Distinguished Vice-Chancellors, there is a great deal of expectation from you, by the Nation.

"Guru Brahma, Guru Vishnu,
Gurudeva Maheswarah,
Guru Sakshat Para Brahma,
Tasmai Sri Guruvenamah."

With these words, I have great pleasure in inaugurating the Annual Meeting of your Association and wish you fruitful deliberations. □

Financial and Other Needs of the Universities for Scientific Research

Rais Ahmed*

I am privileged to be given this opportunity of presenting some data on the general scarcity of funds in the higher education system, related to basic facilities and services in science teaching and research.

This data was collected in connection with a research programme sponsored by the CSIR to study the quality, character and efficiency of scientific research in the universities and the I.I.T's. Twenty-seven institutions—five I.I.T's, six Central universities and sixteen State universities were selected to serve as a structured sample of all universities and I.I.T's. The sample spanned over 179 Departments, out of which 39 were COSIST Departments, 17 Centres of Advanced Study, and 57 Departments of Special Assistance and DRS. The questionnaires from which the data was gathered were answered by 827 supervisors, and 1740 scholars in these institutions. The stability and reliability of the data are of a high order.

Table 1 (on next page) reports responses of scholars, one pertaining to facilities and the other to services. First of all, if we look at "poor" and "very poor" categories, the Central and State universities to the extent of a quarter to around 60% fall in these categories. The word "fair" is very flexible, and in some in this category also are sure to have inadequate basic facilities. A conservative estimate is, that while some universities are slightly better off than others, generally 2/3rds of all the universities have facilities inadequate for good quality scientific research. The IIT's are better placed but, on various items 25% to 45% deficiency is indicated.

With regard to services, the position, if anything is worse. Even the I.I.T's are badly off.

Table 2. (on page 25) is a response of supervisors. The highest priority for improvement is in respect of laboratories, followed by library and funds—which conveys the same message as the response of the scholars.

Table 2, has another important message, which is borne out by a large number of other findings of the study, namely that "motivation" and "atmosphere" are perceived to be the most important non-monetary improvement required. We in the institutions of higher education should clearly realise that money alone will not improve the quality, relevance and output of research unless we bend all our efforts to improve the practices, particularly with respect to the value system we observe in evaluating people as well as research work. On the other hand, low morale is itself partly due to paucity of resources and poverty of basic infrastructure with which institutions have suffered for decades. Briefly, money inputs are necessary and unavoidable, but not sufficient for improving the situation.

The totally unbalanced system of allocation which we have followed in our country is made visible in Table 3 (on page 25). The institutions of higher education have approximately one third of the total R & D manpower employed in our country, more than 50% of the Ph.D's employed in the country—and just about 6% of the resources made available for R & D. In short, if 100 persons have 100 rupees available for research what the university scientist gets as a fraction of what, others get is

$$\frac{6}{30} \times \frac{70}{94} \text{ or } 0.14\text{—}14\%$$

The country has been unjust to itself in pursuing such a distorted policy for decades. The Kothari Commission had rightly said in para 16.46, more than 20 years ago : "A stage has now been reached when deliberate support and encouragement of advanced study and research in the universities should become a fundamental goal of our national policy. This is central to the entire progress and development of science in the country."

I have, indeed, said nothing which members of the AIU could not have said even without a study. But, to a scientist and to educationists data is more persuasive than mere assertion, and it enables at least a rough quantification to be made. There could be many ways of making an educated guess—but if 2/3rds of 180 departments surveyed are in need of about 50 lakhs non-recurring to build their infrastructure, Rs. 60 crores are needed. Since our 27 institutions may be about 1/3rd of the total number of institutions engaged in scientific research—we need Rs. 180 crores as one time expenditure. Services are

*Former Vice-Chairman, UGC.

even poorer than hardware facilities and they require technical posts, workshops, and contingent grants which may add up, to an equal amount over a five year period. 360 crores represent an input for gearing up scientific research in 8th Five Year Plan –accompanied by organized effort to raise the value system, improve human relations, and provide linkage of this system of institutions with external research and productive activity. Policy and planning are called for as generally stated in the Programme of Action approved by the Parliament, and supported recently by the seminar convened last month by NIEPA and NISTADS in Delhi.

TABLE 1

How Do You Rate the following Facilities in Your Deptt./Institution ?
(Percentage, Scho. Resp.)

	Very Poor	Poor	Fair	Good	Excellent
I. Library Facility					
Central Univ.	7	16	15	39	10
State Univ.	15	22	24	21	4
IITs	4	9	14	50	15
I.I.Sc.	5	5	6	47	19
II. Documentation					
Central Univ.	17	23	33	24	4
State Univ.	21	28	34	15	2
IITs	6	19	36	31	7
I.I.Sc	4	12	33	43	9
III. Equipment					
Central Univ.	11	15	37	32	4
State Univ.	10	24	34	24	8
IITs	15	14	40	35	7
I.I.Sc.	2	6	27	47	19
IV. Computer Fac.					
Central Univ.	39	15	21	17	7
State Univ.	50	8	15	17	10
IITs	4	6	21	43	26
I.I.Sc.	5	4	24	39	27
V. Maintenance					
Central Univ.	18	27	34	18	2
State Univ.	19	23	29	22	7
IITs	19	22	41	16	2
I.I.Sc.	6	18	43	25	9
VI. Purchase of Consumable					
Central Univ.	10	19	39	28	4
State Univ.	9	20	39	24	7
IITs	4	15	38	38	5
I.I.Sc.	2	7	30	45	17
VII. Manage & Coord. of Facil.					
Central Univ.	16	26	37	17	4
State Univ.	11	27	30	26	7
IITs	12	26	36	23	4
I.I.Sc.	4	14	41	31	10
VIII. Lab. Assistants Service					
Central Univ.	25	29	26	17	3
State Univ.	21	24	27	22	5
IITs	17	23	38	17	5
I.I.Sc.	8	19	32	28	13

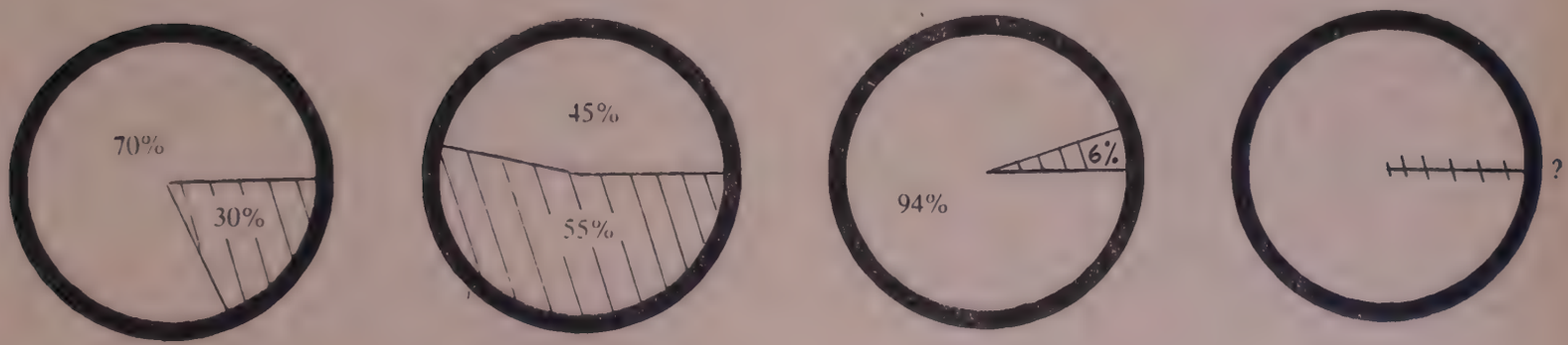
TABLE 2

Which of the following Factors could be Improved Upon in Your Research Set Up. Please Rank Order the First Three (Percentages, Supervisors Res.)

	Central Univ.			State Univ.			IITs		
	1	2	3	1	2	3	1	2	3
Laboratory	25	18	12	27	25	12	27	18	5
Library	15	14	16	19	22	19	11	11	17
Funds	15	19	17	27	20	19	18	18	13
Rules	4	9	9	6	8	11	2	6	5
Red Tape	3	6	7	3	6	7	8	5	8
Linkages	1	1	4	2	2	4	2	1	8
Atmosp.	11	13	11	8	7	8	7	17	10
Motiva.	23	14	16	5	6	15	21	16	14

TABLE 3

Share of R&D Manpower and Resources—Universities and te Rest



TOTAL ≈ 104,000 PERSONNEL

TOTAL ≈ 20,000 Ph.D's

EXPENDITURE

VOICE

SOURCE : (i) S & T POCKET DATA BOOK 1989 (DST)

(ii) NATIONAL COMMISSION ON TEACHERS IN HIGHER EDUCATION (PROF. & CAREER DEV.)

(iii) NATIONAL POLICY ON EDUCATION 1986 – PROGRAMME OF ACTION

UNIVERSITIES

REST

Financial Management of Private Universities—

A Case Study of BITS

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Introduction

In India there are very few universities which are privately financed. By "privately financed" we mean that no government grant is available for maintenance expenditure and the entire maintenance expenditure of the university is met from private contribution.

Whenever financing of the universities is talked about in public forums the privately financed universities are never discussed. It is often an exercise by which the government wants to find how to reduce its expenditure on higher education in the context of its commitment to subsidize higher education at the level of almost 100%. A large number of alternate models like partial grants, loan systems, prescribed economic fee, charging educational levy on industry, putting an educational surcharge on tax, etc., are discussed. While the government is discussing how to economize on its expenditure in higher education, it is not ready to create an atmosphere of allowing private universities to be started and to let them function autonomously. It so happens that certain deemed universities do not get any maintenance grant either from the Central Government or from the State Government or from the UGC; and their financial needs are met by the income generated by means of tuition fees and other charges as well as by private donations. Birla Institute of Technology & Science (BITS) is one such institution. In this paper we will endeavour to give a case study of how BITS manages its finances, what are its problems and what one can abstract from it in terms of possible governmental participation for effective functioning of such universities.

These universities will always have limited finances because no private resources can match the government resources. These universities have to compete with government institutions in order to get comparable quality of staff as well as a quality student input. The financial management of the universities will be affected not only by various problems that may come up in the generation of internal resources but also by the financial changes in other institutions. A tuition fee structure that is much higher than the tuition fee structure in government financed and government aided institutions may dissuade meritorious students from poor families to come to these universities unless certain other corrective measures in terms of increased efficiency in instruction, increased quantum of scholarships, etc. are offered. The establishment budget needs to be changed as and when there is an increase in the salary scales in other institutions. While the government can increase its taxes, both direct and indirect, in order to meet its increased expenditure due to increase in wages, a corresponding facility does not exist for the private university. At best, these universities can only increase their fees and there will always be a limit to this.

Further, these universities, in order to attract good students, must function more efficiently; must prove to its clientele that the entire education is cost-effective, that the marketability of its graduates is higher than the graduates from other universities and so on. This would mean that there must be a constant attempt to innovate and to modernize. The budget of these universities should also take care of these aspects.

BITS Experience

Historical Background

BITS was formed as a deemed university in 1964 by amalgamating the three existing colleges (Birla College of Arts, Birla College of Science, Commerce & Pharmacy and Birla College of Engineering) affiliated to Rajasthan University. Until 1964 the Rajasthan Government was partially meeting the recurring expenditure of these colleges by giving grants according to the norms of Rajasthan Government for grants-in-aid for colleges.

In 1964, as soon as BITS became a university, the Rajasthan Government stopped giving its grants. The Central Government also did not pick up any responsibility in this regard and made it clear that the entire maintenance budget of BITS will be the res-

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ponsibility of the sponsors. This, of course, meant that the total recurring expenditure of the Institute was to come only from private sources. Sometime before 1964, as well as in the initial period after its formation, the Institute accepted developmental grants from UGC with the condition that after the grant period of five years the projects would be continued with their recurring expenditure being shared by the Rajasthan Government. The Rajasthan Government never bothered to pay its dues even after several reminders. While in the balance sheet the Institute is carrying forward a huge amount as dues from Rajasthan Government, the reality of the situation is that some day the Board of Governors of BITS will have to write it off. Further, when the Institute was incorporated, it had as its components a science college, an arts college and an engineering college. The existing faculties had to be maintained and hence, unlike IITs, the Institute had to run science and humanities programmes along with engineering programmes.

The sponsors of the Institute promised to bear any deficit that may result in the budget. The sponsors are keeping their word. However, the rate at which the expenditure is increasing in the university system is much higher than the general inflation rate and the budget expenditure is never raised even to take care of the inflation. Therefore, there are two types of problems : (i) How to meet the expenditure at the existing level ; and (ii) How to meet additional expenditure for new projects, new salary scales, etc.

Coupled with the above, the Institute was also given the responsibility of experimenting and innovating so that it could implement all major educational reforms recommended by the various commissions.

All these made some inroads in the static nature of the budget (Annexure 1). In subsequent sections we describe how all these challenges were simultaneously met and several educational innovations also became innovations for economic financing.

Budget Management and Tuition Fees

In the beginning years, the source of income for the budget was only the fee income and the major expenditure of the budget was only salary expenditure. The income from fees normally made around 25% of the expenditure and the Institute had a deficit of around 75%. From 1970 onwards the Institute started building up an endowment from which an income in terms of dividends and interest started coming to meet part of the deficit of the Institute. This endowment was created by the budget savings as well as by the generous donations by its sponsors. Delicate balance is always kept between the various sources of income, expenditure and the deficit. While the goal is to become economically self-reliant, the Institute's achievement of this goal is always going to be difficult. The inflation, the need for salary increase, the need for increase of maintenance of sophisticated instruments and space makes this effort still harder. Thus, periodic increase **in tuition fees** becomes inevitable (Annexure 2).

The Institute took a policy decision that greater contribution has to come from the beneficiaries by way of paying fees which are higher than in other places. The Institute never thought of capitation fee, like some private colleges. The Institute had to plan the increase of fees in stages and also to discover what was the optimal acceptable increase. The Institute's educational programmes required a high standard input, so that it had to ensure that the quality of input was not sacrificed by the increase in fees. Every time the fees got increased the quality of input was also monitored and it is gratifying to note that until now, the increase in fees has not affected the quality of the input (Annexure 3). In order to avoid tension in the system, whenever the fees were enhanced, the increase was always for the new admissions and not for the students in the pipeline. This means that when a student gets admitted to the Institute he knows what the fees are and is also sure that in his case the fees are not going to increase till he completes his degree, so that he can plan his finances well ahead. Further, whenever the fees are raised the quantum of scholarship is also raised. The Institute also introduced an 'Earn While You Learn' scheme as well as schemes through which the students work as Professional Assistants under the guidance of faculty on any developmental project of the Institute. At any time around 100 students may be participating in these schemes. Financial aid schemes for higher degree students are also introduced for participating in teaching and course development.

Admission Process

The Institute took a decision at the time of its inception that it will remain an institution with an All-India character of student input. Admissions are done within a deadline and require a quality input through a fair and open competition strictly based on merit. Since the finances of the Institute would not permit an entrance examination in a large number of

centres spread all over the country to keep its All-India character, the Institute decided to make admissions based on the marks obtained by the applicants in the qualifying examinations. In order to compare the various examining boards the Institute evolved a process of normalization. Through this process any disparity that might exist between the absolute marks awarded to the candidates by different examining boards in the country is brought to the same scale of comparison. The Institute also decided to have a single application for all the 19 First Degree programmes. The Institute, after creating the linear merit order, is able to decide on a cut-off point above which everybody is asked to pay fees within a particular deadline. Some of those who are asked to pay fees are given firm admission and others are put on waiting list. By a process of iteration the Institute is always able to fill up all its seats within a predetermined deadline so that classes can start as per schedule.

The intake of the Institute is always planned so that all the facilities are used to the optimum level. When the government switched over from a five-year programme to a four-year programme (after 10+2) for the professional degrees, the Institute planned, in a phased manner, to increase its normal admission intake of around 450 to 550, so that the total strength is maintained. The Institute was also operating the five-year integrated science programmes which were also professional in character. When the duration of engineering degrees was shifted to four years, integrated M.Sc. degrees were also converted into four-year integrated programmes. When the duration was reduced because of the fact that the students are coming after one more year of schooling, the academic contents which include apart from specialized science courses, courses on engineering science, technical arts, etc. were kept at the same level by increasing the contact hours. In other words, the economy was obtained by maintaining the same duration for science and engineering programmes, without sacrificing academic standards.

The optimum level of utilization, which is strictly adhered to by planning the intake, is also to be maintained continuously. For example, if there is depletion in strength because of students leaving, after joining the Institute, there had to be a method of compensating the same. The Institute's educational process allows admission into the second semester which takes care of all the depletion that takes place in the first semester. The second semester admission also takes care of admission of some outstanding students whose results were not available in time for first semester admissions. The Institute's method of admitting students with advanced standing may allow students to enter the programme at any point of time during the four years. This also takes care of certain depletions that might take place during later years. These multiple entry features, which are generally considered as educational reforms, have been introduced as incentives for reduction of unit cost of education.

Flexibilities

The Institute adopted a modular structure of courses which enables it to evolve a large number of flexibilities. The essential features of these are: multiple-point entry, second semester admission, dual degree, transfer, etc. By a marginal increase of input in specialized courses, without increasing the workload of teachers either in terms of classroom contact or in terms of laboratory, it became possible for the Institute to offer a second degree programme to almost one-third of its intake under the dual degree scheme. While this helps the Institute to increase its revenue, it also helps the ambitious students to increase their educational attainment and marketability by simultaneously working for two degrees. Dual degree can normally be finished by spending just 4+1 years instead of 4+4 years. In any educational system there will always be failures and this causes wastage. The Institute's transfer mechanism reduces this wastage and creates a process of reuse of wastage. Some students with high percentage of marks in qualifying examinations, after getting admitted to some of the demanding professional programmes, might fail to achieve the necessary performance in analytical courses and might have to leave the Institute unless remedial measures are taken. The Institute's Academic Regulations as well as the educational process allows such students to transfer into relatively less demanding programmes, which require a different type of skill; and in which the students might perform better.

Abolition of Departments

The Institute has created an administrative structure by which the department, as an administrative unit, has been abolished. The discipline, as a peer group, still exists with a group leader (who in normal terms is considered as head of department); but the group leader does not shoulder the normal administrative duties of a head of the department in terms of day-to-day routine affairs. The group leader has to monitor the academic programmes of his

discipline and also work for academic improvement. Functional divisions were created in order to take care of specific functions centrally. This helped to abolish a lot of duplication. Time-table is made centrally. Utilization of facilities are also done centrally. This also gave an academic advantage, particularly in terms of running interdisciplinary courses. A course like thermodynamics, which definitely requires people from various disciplines, can now be planned to be taught by chemists, physicists, chemical engineers and mechanical engineers by a centrally operated Instruction Division.

Similarly the various operations regarding student life are done by functional divisions. For example, students, irrespective of degree programmes they are pursuing, have to go only one division, namely Student Welfare Division, in order to get their scholarships, railway concessions, etc.

The administrative restructuring into functional divisions actually means reduction of total expenditure, because in this process no function is duplicated.

Examination Reform

This is one of the most talked about reforms in every conference. Plan after plan, the University Grants Commission and other agencies have been willing to sanction money to implement this reform. If one carefully analyses it, one will notice that what is required here is not money but a change of attitude. As a matter of fact, if effective examination reforms are done then there could be effective savings in the budget of a university. The huge machinery now created by the various universities in their examination branch to appoint and monitor external examiners, to despatch and receive confidential question papers and answer books, to create a moderation board, to have a huge office under a controller of examinations, to disburse a large amount of money to various teachers for setting question papers, correcting the answer books of unknown students, etc. can be dispensed with. Of course, the cooperation of teachers and students would be a necessary ingredient for success. BITS realized this and since its inception adopted the examination reform as a principal reform and implemented it from day one. All examinations are internal and continuous. The marking system is made open to the students and the answer papers are returned to the students, whether it is a small test or the semester-end examination, and the students are given an opportunity to discuss with the teachers the marking procedure. This ensures credibility of the system. A process of appeal is always available through what is known as the Examination Committee. Contrary to the belief that there would be thousands of appeals, the handling of which would be difficult, the openness of the system resulted in an extremely negligible number of appeals. Further, there are many components of examinations like tests, quizzes, assignments, group discussions, seminars, etc. including a final examination. Teachers are not paid anything extra for conducting any of these components. The examination reform not only became effective for improving the quality of teaching, because of the feedback it constantly creates, but also became an instrument in the reduction of cost of education.

Restructuring of Education

The restructuring of education, which essentially meant a broad foundation before one gets into specialization, was thought of as a vital academic reform. BITS implemented it in 1971 and has successfully operated and stabilized it. Though it was for achieving its worthy academic objectives, BITS took advantage of its inherent nature of cost reduction. It became possible for BITS to reduce a plethora of marginally different courses to a manageable number of courses and still retain a wider choice to the student population. There are no separate courses, say in Probability and Statistics, for students of biology, economics, engineering, etc. The course on Probability and Statistics will be the same, taught by several teachers in various sections and the students from different programmes can distribute themselves in the various classes. This is only one example. Similar is true of courses on calculus, electronics, circuit theory, thermodynamics, etc. The integrated educational process also helped in not having a class size below a critical limit and made it possible to plan for optimal utilization of facilities.

Time-table Making

Often in a university system, the time-table is never planned beforehand and it goes on being adjusted almost throughout the semester. Also, time-tables are being planned by the individual departments who never bother for optimum utilization of various facilities of the institution, namely, classrooms, examination halls, laboratories, etc. The Institute decided to have its time-table planned

centrally. Again this is done for two purposes : (1) It is possible to coordinate inter-disciplinary courses—teachers from one discipline can be asked to teach courses of another discipline without going through the circuitous route of departmental heads; (2) The classrooms and the laboratories across the Institute can be fully used. The time-table is like a railway time-table which only lists the courses, the hours, the venues and the instructors. While classes and laboratories of the Institute are continuously scheduled from 8.00 A.M. to 6.00 P.M. without the formal lunch hour, the individual staff members and the individual students may choose their own schedule within the above working hours of the time-table. Further, certain project laboratories, computer centre, reference library, etc. are kept open for work almost upto midnight everyday. The students will have a choice for teachers and hours. For about 300 courses which are run in a semester, about 50 classrooms are sufficient and on an average 70% is the percentage of utilization of sapce at a time. While the Institute has introduced several new degree programmes the Institute has never increased its instructional space by constructing new buildings.

Centralized Laboratory Facilities and Centralized Purchase Machinery

Whenever new equipments are purchased by a particular department in a university, it seldom bothers to find out whether similar equipment exists in any other department; and if so, how it is being used. The Institute has decided to integrate all laboratories and keep a central inventory system which not only lists all equipments but also keeps an information base as to its utility, functioning and the duration of downtime, etc. All laboratory courses are centrally planned. A large number of project courses are encouraged for effective use of modern equipments. There is no distinction between undergraduate and postgraduate laboratory facilily. All equipments are available for courses at the first degree level. All purchases of new equipments as well as the routine replenishments are done centrally by a division known as Educational Hardware Division. This helps us to avoid duplication of necessary equipments. It also avoids duplication of consumables which may already be existing in some corner of the Institute. Further, it saves the cost of duplication of effort in the purchase mechanism. For example, the physics department would have created a process of quotations or a tender system and the electrical engineering department would also have created the same process for the same equipment. This can be avoided. Further, the customs clearance, the handling of orders, clearing of octroi, transport, etc. are all done by a very small number of people in a centralized arrangement. The reduction of cost is quite substantial as a result of this administrative reform.

The Ratio of Teaching, Supporting and Helping Staff

The principal components of a university are teachers and students. For the effective interaction between these two and for a successful functioning of the university system for converting a raw student into a finished product (graduate), certain other manpower inputs are also required. These are the supporting and helping staff. If the university system has not planned well its academic reforms and academic goals, it is very likely that supporting systems may grow to a Frankensteinian size as compared with the main system. A huge amount of increase in recurring expenditure in government institutions is due to the fact that this ratio between teaching, supporting and helping staff is not in appropriate proportion. BITS has planned this ratio to be around 1 : 1 : 1.

University-Industry Linkages—Industry Sharing the Expenditure

Since 1958 almost every commission, committee and conference has stressed the need for forging linkages of the university with society in general and with the world of work in particular.

The medical education has traditionally created an internship programme by which it requires a student to go through a given period of internship in a hospital before he gets his medical degree. The concept is that professional experience and professional involvement as a part of learning is a must for a student before he enters the profession. The medical profession realized that it is not only beneficial to the student but also essential for the society. As a matter of fact, this system of medical education has created a situation by which the entire health system will collapse if it withdrew the inteanship requirement for the medical degree.

In the nonformal or unorganized system of learning skills like cycle repairing, tailoring, etc., the learning process is always through some sort of internship or apprenticeship. The little boy in the cycle shop learns the entire mechanism of repairs through odd jobs. The cycle workshop will not be able to function effec tively if these little boys were not around.

In between these two extremes, the educational system never conceived an arrangement for internship. The university system is almost delinked from the world of work. The graduates start learning how to work only after they go to work; this of course, if they also get job. The concept of university-industry linkages achieved through the Practice School programmes of BITS filled this lacuna. By its very design, it expects every student, whatever may be his programme of specialization, to spend almost seven and half months time during his entire first degree programme in participating in the ongoing projects in the world of work. While this has given tremendous dividends in terms of improvement of the educational curricula, it has also shown how to make the industry participate in the cost sharing of the university without getting the feeling that there is a special cess or a tax on it. Almost 1100 students and about 90 faculty members are engaged in the practice school programme in various parts of India (Annexure 4) during various times in a year; and about 250 students and 30 faculty are engaged throughout the year in some selected centres. Indirectly, a sum of about Rs. 30 lakhs for the institutional expenditure and students' expenditure is borne by the industry.

The practice school programme, which was started in 1972 grew to the dimensions mentioned above gradually (Annexure 5). The constant interaction between the Institute and industry developed through the practice school programme created several collaborative ventures. The Institute started M.E. (Collaborative) programme in some functional areas in collaboration with specific industries. Currently, there are two programmes : one on Project Management done at Calcutta and another in Industrial Development done at Nagda. Almost the entire operating expenses for these programmes come from the collaborating industries. Industries give classroom space and allow use of other facilities as laboratories, computers, etc. The personnel from the industry also participate in teaching and guiding projects.

Recently, encouraged by the successful running of the formal M.E. (Collaborative) degree programmes, a number of industries started showing interest in having some continuing education/training programmes for their employees leading to degree/diplomas. The Institute started the Distance Learning Programmes leading to MVS, BS and MS degrees in certain specific areas of science and technology. The clientele for these programmes will always be employees. Candidates will be admitted to the programmes only if the employers are convinced that such a training is required for their employees and thereby sponsor the employees. The employers are also expected to commit their physical facilities as well as certain manpower to supervise the students. Here again, a useful joint educational endeavour is undertaken on the basis of sharing of cost between the university and the industry.

In 1984, when the Department of Science and Technology was talking about the introduction of Science Parks, the Institute thought that it could reverse its practice school process and achieve similar goals. This resulted in the starting of what is known as Technology Innovation Centre (TIC). This programme is aimed towards the participation of scientist-engineer-entrepreneurs running small scale industries, who have ideas on projects, but who cannot afford to have an R & D setup. The Institute allows them to use its idle facilities and student manpower for their projects. Students pick up these projects as requirement for their degrees and these scientist-engineers act as their project guides during the tenure of the project. While this has widened the academic interest of the students, it also added a new type of faculty without almost any cost to the Institute.

Sponsored Research

Sponsored research in the Indian context has more hidden expenditure rather than a source of income for the university. The per scholar cash inflow from any research project is always smaller than the average unit cost. Most of the research projects do not have a provision for overhead expenditure. Yet, universities, in order to maintain their position in their peer group, are compelled to have sponsored research programmes. In government financed universities, the hidden expenditure is never a problem and is always absorbed by the maintenance grants by the government. On the other hand, for private universities the problem is every tough to tackle. The interested faculty will always feel that the university is not showing any interest in his obtaining sponsored projects from national agencies like DST, CSIR, etc. The agencies give money for equipments, maintenance of which will always become the responsibility of the university; will give money for fellowships to research students whose housing, office-space, etc. again become a complete responsibility of the university. BITS tried to solve this problem by (i) insisting on channelizing research in certain specified priority areas only; and (ii) insisting that whenever such projects are submitted, certain

components of the recurring expenditure as well as overhead charges are included in the financial proposal of the project. Further, by its university-industry linkages it got projects sponsored by industries to be conducted in the industries, so that the overhead charges are automatically transferred to the industries. May be, like the American Universities we should insist that certain fixed percentage of every research grant is given to the universities as overhead charges.

Computerization and Modernization

Every university, now, has good computer facilities. Very few universities have used these facilities to modernize their administration by creating a proper information-base. BITS acquired its first computer (IBM 1130) in 1969 and immediately put it to use also for its admission process, students' records, etc. Since then, BITS has got a few other computers and now all our students' records, staff records, budgets, salary operations, time-table, practice school operations, distance learning operations, etc. have been computerized. The software for all these was completely written by the students and staff as part of their academic and research projects. Enormous savings in expenditure was obtained by this process. All educational reforms are interlinked. The semester system will be successful only if the semester results are made available before the starting of the next semester. Continuous and internal evaluation with relative grading will be successful only if the classes start on time and examinations are held as per the schedule. Admissions have to be done according to a fixed schedule. All this requires a well planned calendar of activities; and all the deadlines implied in this calendar have to be met. Most universities fail in these in spite of the fact that they have more manpower and spend more money on overtime. One great achievement of the Institute's computerization is that all these deadlines are met with minimum manpower and no expenditure on overtime. Along with computerization and modernization, the important problem is training of manpower for the operation of computers. BITS retrained its existing clerical and non-technical staff for this purpose through certificate, diploma and degree programmes while they were still at work. The BITS system used its own human resources for its development without having to spend its resources for obtaining external help.

Infrastructural Facilities

The Institute departments are also taking care of the development and maintenance of infrastructural facilities. The construction work, whenever a new building has to be built, is completely done under the supervision of the Civil Engineering Group. The electrical repairs and electrical instruments are taken care of by the Electrical Engineering Group. The Instrumentation Unit takes care of repairs of instruments and the Workshop does necessary fabrication and other services. No outside architects are used for the design of buildings and no outside consultants are used for installation of computers and other equipments. Further, there are courses like 'Management of Engineering Services in Universities', 'Computer Use in University Operations', for which the teaching process includes the actual service and maintenance of the facilities and the equipments in the Institute. This not only helps to improve the academic infrastructural facilities of the Institute but also improves the financial management in these areas.

Developmental Projects

The developmental projects are always planned to ensure that they are in unison with the general goals of the Institute. The items requested in the developmental projects would only augment the existing budget and would not create a newer burden for the budget. Further, while asking for the items, care is taken to ensure that the Institute has the ability to absorb the expenditure after the plan period is over. This is particularly important while asking for new posts. As a matter of fact, whenever a new type of degree programme is planned, it is always done either when already trained faculty or trainable faculty are available in the Institute, so that the developmental projects can still run without asking for new posts. This, of course, would mean retraining of the faculty to meet newer challenges of the curricula and a very well planned faculty development programme.

In-house R & D

Any consultancy project taken up by a university is always in terms of giving consultancy to management or engineering aspects of other organizations. The universities never thought of having an in-house R&D set up like the industries to constantly research on its own functioning with a view to improving its processes and products. In the administrative structure of BITS, a separate division, called Educational Development Division, has been created to function as in-house R&D. A large amount of data about the Institute is continuously collected and analyzed. This Division also plans and monitors curriculum development, textbook writing, examination reform, UGC developmental grants, cost-effectiveness, etc.

Certain specific proposals by which the Government may come into help

Whatever is described above may create a feeling as if everything is good and all that one is to do is to simply sit back and watch. As a matter of fact, there are certain areas where there are always difficulties and in the public interest the government can step in to give a helping hand. These are listed below.

(1) There could be instances where some private universities may have to face certain temporary financial problems. The nationalized banks could introduce a plan by which, under special circumstances, these universities could be given soft loans with minimal interest repayable in easy installments.

(2) Since the fees in these institutions are high, a

special loan system could be devised for meritorious students admitted to these universities.

(3) The increase in salary scales and various D.A. instalments announced periodically by the government will always mean an unexpected financial burden for these universities. While these universities can be continuously vigilant to effect economy in their operating expenditure, it will not be possible for them to ignore periodic revision in salary scales and D.A. increase for the staff of government-run and government-aided institutions. It is understood that the government may not be able to give maintenance grant to these universities as it does for government universities. However, the government should at least try to meet the total additional expenditure on increase in salary and D.A. for the existing staff. This could mean a sort of grant-in-aid which picks up part of the establishment expenditure in the midstream.

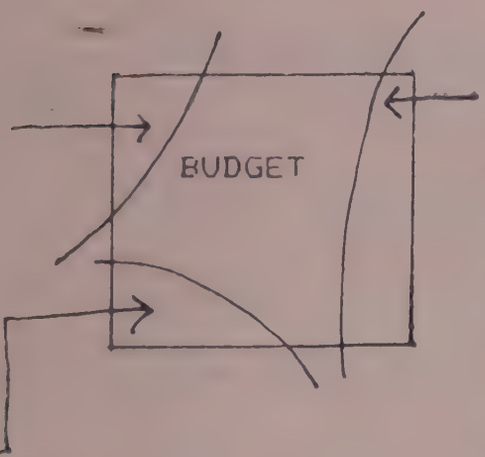
(4) Certain concessions in terms of electricity rates, water charges, sales tax, entertainment tax, etc. can be automatically given so that a portion of the maintenance expenditure is indirectly shared by the various agencies of the government.

(5) Like the newspapers and magazines, private universities may also be given concessional postage rates.

(6) Government could also participate in a certain outright block grant to enable the universities to build a corpus. □

Annexure 1

INROADS INTO THE BITS BUDGET



SHOCK ABSORBER:

* INFLATION

CERTAIN BURDENS:

* NON-TECHNICAL PROGRAMMES
* DUAL DEGREE
* REVERSE OFFERING
* II SEM ADMISSION
* PRACTICE SCHOOL
* SUMMER TERM
* SHOW COST-EFFECTIVENESS
* SAVE FOR FUTURE
* ADMISSION MODALITIES
* FACULTY DEVELOPMENT
* COURSE DEVELOPMENT

INROADS BY:

* REVISION OF PAY SCALES DURING 1974-75 AND 1989-90
* DA ANNOUNCEMENTS WITH RETROSPECTIVE EFFECT

-- 7 TIMES BETWEEN 1977-78 AND 1988-89

* EMERGENCY NON-RECURRING NEEDS
* INCREASED INTAKE IN THE AFTERMATH OF 10+2 SCHOOLING
* SPONSORED RESEARCH
* PROCESSING COST OF FORD FOUNDATION DOLLARS UPTO 1978-79

Annexure 2

BITS EFFORTS TOWARDS SELF-SUFFICIENCY
Building of corpus & more economic sharing of cost by parents.
Deficit
Div. + Interest
All fees
Other Revenue
Percentage of Total Recurring Expenditure
10
20
30
40
50
60
70
80
90
1964-65
65-66
66-67
67-68
68-69
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80
80-81
81-82
82-83
83-84
84-85
85-86
86-87
87-88
88-89
YEARS

Annexure 3

ADMISSIONS : QUALITY OF STUDENT INPUT

Year of Admission	Semester	Normalised agg.% Highest%	Lowest%
1972-73	I Sem.	94.30	65.22
	II Sem.	88.16	65.22
1973-74	I Sem.	100.00	70.97
	II Sem.	94.41	70.97
1974-75	I Sem.	97.83	73.00
	II Sem.	97.83	80.11
1975-76	I Sem.	97.00	78.61
	II Sem.	96.14	79.76
1976-77	I Sem.	99.73	78.50
	II Sem.	92.30	69.63
1977-78	I Sem.	100.00	79.11
	II Sem.	97.19	82.84
1978-79	I Sem.	100.00	60.00
	II Sem.	98.05	79.67
1979-80	I Sem.	100.00	69.46
	II Sem.	99.87	84.24
1980-81	I Sem.	100.00	78.72
	II Sem.	(No admissions made)	
1981-82	I Sem.	100.00	81.10
	II Sem.	97.15	86.30
1982 83	I Sem.	100.00	84.13
	II Sem.	100.00	86.64
1983-84	I Sem.	100.00	84.68
	II Sem.	99.22	85.35
1984-85	I Sem.	99.89	85.60
	II Sem.	96.67	85.60
1985-86	I Sem.	100.00	85.05
	II Sem.	99.04	85.56
1986-87	I Sem.	100.00	88.63
	II Sem.	97.61	88.63
1987-88	I Sem.	100.00	88.11
	II Sem.	97.81	88.37
1988-89	I Sem.	100.00	88.86

Annexure 4 on next page

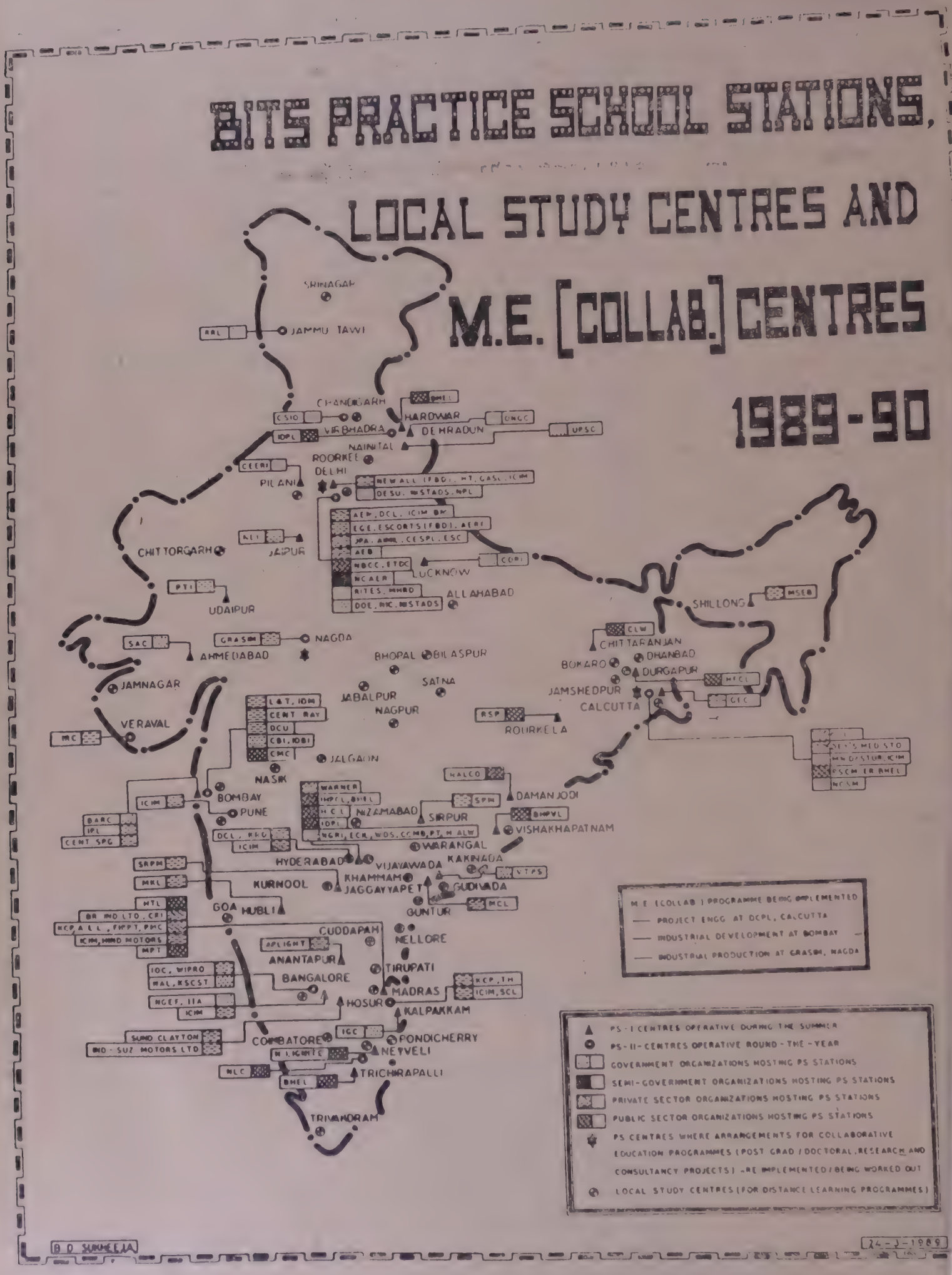
Annexure 5

PRACTICE SCHOOL-I GROWTH STATISTICS

Sessions	No. of students who attended PSI	No. of Faculty who supervised PSI	No. of PSI Stations
Summer 1973	15	04	01
Summer 1974	89	17	09
Summer 1975	244	26	14
Summer 1976	355	33	28
Summer 1977	349	32	38
Summer 1978	335	35	38
Summer 1979	474	45	53
Summer 1980	397	34	42
Summer 1981	372	33	36
Summer 1982	462	39	44
Summer 1983	476	43	
Summer 1984	491	40	52
Summer 1985	514	42	52
Summer 1986	507	38	49
Summer 1987	497	35	49
Summer 1988	552	42	59
Summer 1989	574	41	58

PRACTICE SCHOOL-II GROWTH STATISTICS

Sessions	No. of students who attended PSII	No. of Faculty who supervised PSII	No. of PSII Stations
Second Sem. 72-73	10	04	01
First Sem. 73-74	12	04	01
Second Sem. 73-74	12	08	01
First Sem. 74-75	36	05	06
Second Sem. 74-75	56	15	09
First Sem. 75-76	31	06	05
Second Sem. 75-76	75	12	15
First Sem. 76-77	121	18	15
Second Sem. 76-77	110	21	18
First Sem. 77-78	151	16	16
Second Sem. 77-78	159	19	20
First Sem. 78-79	166	23	20
Second Sem. 78-79	171	23	26
First Sem. 79-80	159	25	23
Second Sem. 79-80	153	25	22
First Sem. 80-81	183	27	25
Second Sem. 80-81	195	26	28
First Sem. 81-82	181	28	30
Second Sem. 81-82	184	27	31
First Sem. 82-83	208	26	32
Second Sem. 82-83	212	23	34
First Sem. 83-84	213	30	31
Second Sem. 83-84	200	23	35
First Sem. 84-85	217	30	34
Second Sem. 84-85	213	37	41
First Sem. 85-86	239	33	41
Second Sem. 85-86	231	34	46
First Sem. 86-87	248	36	47
Second Sem. 86-87	249	40	45
First Sem. 87-88	231	40	48
Second Sem. 87-88	232	36	46
First Sem. 88-89	274	39	51
Second Sem. 88-89	267	41	51


BITS PRACTICE SCHOOL STATIONS,
LOCAL STUDY CENTRES AND
M.E. [COLLAB.] CENTRES
1989-90
SRINAGAR
JAMMU TAWI
CHANDIGARH
HARDWAR
DEHRADUN
NAINITAL
ROORKEE
DELHI
PILANI
CHITTORGARH
JAIPUR
UDAIPUR
LUCKNOW
ALLAHABAD
SHILLONG
NAGDA
AHMEDABAD
JAMNAGAR
VERAVAL
BHOPAL
BILASPUR
SATNA
JABALPUR
NAGPUR
CHITTARANJAN
DHANBAD
DURGAPUR
BOKARO
JAMSHEDPUR
CALCUTTA
ROURKELA
JALGAON
NASIK
BOMBAY
PUNE
NIZAMABAD
SIRPUR
DAMANJODI
VISHAKHAPATNAM
WARANGAL
HYDERABAD
VIJAYAWADA
KAKINADA
KURNOOL
KHAMMAM
JAGGAYYAPET
GUDIVADA
GUNTUR
GOA
HUBLI
CUDDAPAH
NELLORE
ANANTAPUR
TIRUPATI
BANGALORE
MADRAS
HOSUR
KALPAKKAM
COIMBATORE
PONDICHERRY
NEYVELI
TRICHIRAPALLI
TRIVANDRAM
M.E. (COLLAB.) PROGRAMME BEING IMPLEMENTED
PROJECT ENGG AT DCPL, CALCUTTA
INDUSTRIAL DEVELOPMENT AT BOMBAY
INDUSTRIAL PRODUCTION AT GRASIM, NAGDA
PS-I CENTRES OPERATIVE DURING THE SUMMER
PS-II-CENTRES OPERATIVE ROUND-THE-YEAR
GOVERNMENT ORGANIZATIONS HOSTING PS STATIONS
SEMI-GOVERNMENT ORGANIZATIONS HOSTING PS STATIONS
PRIVATE SECTOR ORGANIZATIONS HOSTING PS STATIONS
PUBLIC SECTOR ORGANIZATIONS HOSTING PS STATIONS
PS CENTRES WHERE ARRANGEMENTS FOR COLLABORATIVE EDUCATION PROGRAMMES (POST GRAD / DOCTORAL, RESEARCH AND CONSULTANCY PROJECTS) -RE IMPLEMENTED/BEING WORKED OUT
LOCAL STUDY CENTRES (FOR DISTANCE LEARNING PROGRAMMES)
B D SUKHEEJA
24-3-1989

Consensus at the AIU Seminar on "University Finances"

Held at University of Kashmir on October 5, 1989

Reiterating with approval the perspective laid down in the NPE 1986 that "development-oriented objectives of Indian Society can be realised only by making investments in education of an order commensurate with the nature and dimension of the task"; (para 11.1)

and that "The deleterious consequences of non-investment or inadequate investment in education are indeed very serious"; (para 11.3)

Fully realising that demands of equality of opportunity necessarily imply that no one with ability should be debarred from university education merely due to poor financial backing or poverty;

Appreciating that despite the proliferation of universities and colleges during the post-independence period, only about six per cent of the country's population in the relevant age group is receiving higher education and, therefore, enrolment of students and the number of universities and colleges is bound to increase further during the coming years;

Noting, however, that the NPE 1968 and NPE 1986 have laid down six per cent of the GNP as the desirable norm of investment on education;

But *deeply concerned* that financial credibility of universities (particularly of State Universities) has been going down at an increasing pace over the past two decades, and that loss of financial credibility of an institution has its direct repercussions on academic morale (and vice-versa);

And *apprehending* that given the priorities in the national and state plans, adequate state funds are unlikely to be made available to meet the future demands of higher education in the desired manner and on the required scale;

This Seminar organised on the occasion of the 64th Annual Meeting of the Association of Indian Universities, after due deliberation and consideration, arrives at the following consensus :

1. The quantum as well as the pattern of maintenance grants, particularly for state universities, calls for serious reconsideration and remodelling.

1.1 The system of block grants is preferable to deficit grants, since it provides the much needed flexibility and ensures a certain modicum of functional autonomy to the universities. It should, therefore, be adopted for all universities by all the states.

1.2 It is necessary that a detailed scientific study be made by the universities about their replacement/repair and maintenance needs as also about the rate of growth of expenditure, and suitable norms be developed for the same in order to get over the prevailing ad hocism.

These norms should then be standardized on an all-India basis with the following perspectives in view :

(i) There ought to be a unified approach at the Central and State levels;

(ii) Financial inputs should be worked out for different programmes of studies (in terms of salaries of academic and non-academic staff, library and laboratory facilities, equipment and furniture, students amenities, general administration and supervision and such other basic components).

(iii) These norms for each component will have to be correlated with student load, inputs for research and requirements for teaching aids, etc.

(iv) It would be preferably to work out physical and financial (budgetary) norms separately, so as to provide a basis for ensuring standardisation between different institutions and between different regions of the country.

1.3 This distribution of resources thus requires to be planned on the basis of the entire institutional unit costs (coursewise), ensuring the maintenance of a national average unit cost in all institutions of higher learning.

1.4 Pending the development of these norms 10 per cent growth rate, which appears to be the observed trend based on available data requires to be accepted by the state government.

1.5 The *university enactments* require to be amended providing statutorily for :

(i) Specific schedule for release of funds;

(ii) The periodicity with which the quantum of grants should be revised (It should better be fixed as five years dovetailing with the Five Year Plan frame);

(iii) Borrowing by universities for such items of activity in a university which are of a commercial nature, e.g. printing press, housing.

1.6 Considering the multifarious and competing demands on scarce financial resources of the country, it is incumbent on the universities to ensure that optimal use of the available resources is made by them.

Appropriate norms for assessing the level and quality of such utilisation need to be developed.

The quantum of developmental grants need to be linked to the norms regarding the level and quality of the utilisation of existing resources.

2. The quantum of financial outlay by the state (Central, State, UGC or Planning or Finance Commission) for education should necessarily be increased to six per cent of the GNP by the end of the Eighth Five Year Plan, and it should be so reflected in the Plan document.

2.1 Out of funds allocated for education, the share of higher education should be clearly earmarked in the Finance Commission recommendations, as also in the Five Year Plans.

2.2 The overall financial allocation for higher education should be determined in the context of the fact that the quality and pace of socio-economic development of the country itself is based on the availability of skilled and trained manpower in various fields.

2.3 In no case should funds allocated for higher education, be diverted or reallocated for other purposes by state governments. Such an obligation needs to be statutorily imposed on State Governments.

3. The quantum as well as the pattern of funding by UGC requires to be reviewed and revised.

3.1 The quantum of developmental funding through the UGC needs to be substantially increased so as to enable the universities and colleges to achieve the goals and perspectives laid down in the NPE 1986, and within the stipulated time-frame.

3.2 Now that 'education' is a subject in the concurrent list, 100 per cent assistance (instead of the present 80 per cent or less) should be given by the UGC for salary revision as well as for all specific items of developmental activities.

3.3 The UGC and the Central Govt. must have the five year plans finalised and the quantum of funding to the universities under them determined much before the commencement of the plan period, so as to ensure continuous inflow of resources for organised development in the universities.

3.4 The UGC must streamline its procedures for the release of plan funds to the universities without delay and without unnecessary obstacles.

3.5 The setting up of regional offices of UGC for this purpose, amongst others, should also be considered.

4. In the case of Agricultural Universities, the recommendations made by the National Commission on Agriculture in the 1960s and the ICAR Review Committee during 1977-78 regarding their financing should be given effect in toto.

4.1 In case of Medical Universities, Engineering Institutions, and such other institutions for specialised studies, the funding should be according to the norms developed by nodal agencies (official and non-official) in each specialised field.

4.2 The financing of deemed to be universities needs to be reviewed by the UGC and the concerned State Govts. so as to ensure that they regularly receive adequate funds for capital expenditure, maintenance and development, from the concerned State Govt. and/or the UGC.

4.3 Those deemed to be universities which do not receive any maintenance grant through state

funding or from UGC, should be extended the facility of receiving soft loans from banks under specified circumstances and their additional expenditure on increase in salaries and D.A. etc. should be underwritten by the concerned State Govt.

4.4 For the newly established universities, norms for initial funding for capital and other requirements need to be worked out, ensuring that funds become available from the Central or State Govt. as soon as the university is declared to be established.

As an ideal solution no new university ought to be established unless adequate funds according to pre-determined norms are made a condition of their establishment.

The existing UGC norms in this regard have been found to be completely unrealistic and inadequate.

5. Fully appreciating that the quality and quantum of research depends to a substantial extent on a proper academic and research atmosphere in the institution and on the motivation of its research workers, and that much is wanting in the universities in this regard, the fact remains that the allocation of research funds to universities is grossly inequitous when compared with that of other institutions.

This imbalance requires to be rectified.

6. The system of funding of universities largely through state subsidies in the shape of grants (and the tuition fees constituting only 10 to 12 per cent of the total university income) imminently needs to be reviewed and drastically modified because :

(i) It leads to the development of an attitude of complete indifference, complacency and irresponsibility on the part of the students and the beneficiaries towards their universities and to the society;

(ii) It is highly inequitable since it not merely involves net transfer of income from the rest of the community to those enjoying university education, but also that the students who benefit from it do not at any time share the proportionate burden of the cost of such education, even though earnings of those with higher education are decidedly more than that of those without it ;

(iii) It leads to erosion of the autonomy of the universities because of unwanted and stringent financial controls imposed by the state with grants.

6.1 It, therefore, seems to be necessary that the cost of higher education should be appropriately reflected in the fee structure. The deferred payment of the amount so determined should, however, be linked to the attainment of the earning stage by the student.

Detailed modalities and procedures for the same need to be worked out after a national debate.

6.2 It is hoped that through such a system the students would gain the dignity, develop a sense of responsibility and come to realise their obligation to society and to the state.

To be able to attract students despite high fees, the universities will be forced to improve their efficiency and make the optimal use of available resources (perhaps this is already happening in a few institutions which do not receive any maintenance grant from public funds).

7. The universities should generate their own finances through consultancy in diverse fields and to diverse clientele, in India and abroad, and should establish modalities and mechanism for the same.

This avenue has vast potentialities for generating resources and experiences of the various institutions require to be pooled together through a consortium.

7.1 Other modalities for generating more resources like the constitution of a Universities Bank (with share capital subscribed by the universities) catering to the specified needs of the universities through loans need to be experimented.

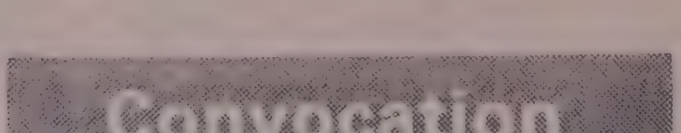
8. To enable the universities and the AIU to attract substantial endowment funds from business and industry, 100 per cent exemption from income tax should be granted by the Central Govt. to the donor for donations made to the universities and the AIU.

The Battle of Genders

"The battle of genders has so far not exploded in India : has it to enter India and its society and culture before women are free ? Is gaining equality with man the only answer to woman's problems ? Is man the only measure of woman's endeavour ? Or, is it necessary to look in another direction ?" asked Mrs. Pupul Jayakar, Adviser to Prime Minister on Heritage and Cultural Resources. Mrs. Jayakar was delivering the Convocation Address at the third annual convocation of the Mother Teresa Women's University. Excerpts

We are approaching the end of a wounded decade, a decade of erosion of human values. Destruction of the environment and of the biosphere, increasing pollution, escalating violence, growing fundamentalism and mounting pressures of materialism threaten woman at all levels of her social, economic, biological and psychological existence. Cultures are crumbling, the mind becoming sterile.

The coming decade is of unique importance, for it harbingers not the end of a century but the birth of a new millennium. History throws light on end of the century encounters, but there is little to acquaint us with the pressures generated in the human psyche when it approaches a new millennium. The end of the last millennium is shrouded in time. Yet the future already has a history, determined by the seeds we sow today, the actions we take. Standing before the centuries, we have to ask ourselves—What is woman's role ? What direction does she take ? How does she act ? What are her imperatives ?



The Constitution of India ensured woman an equal position with man in regard to her rights and responsibilities ; inheritance and other laws were enacted to safeguard her and to give her economic and psychological stability. We see how fragile legislation can be when it is not backed by sturdy and passionate human-beings who ensure that legislation is translated into action. It is unfortunate that in the first decade of our freedom when it was possible to formulate and pass a common civil code we hesitated and the law was not enacted. Any effort to introduce such a code today is becoming increasingly complex, perhaps impossible.

The Mahatma in the 1930s drew women out of their homes and put them at the forefront of the freedom struggle. "If non-violence is the law of our being," he said, "the future is with women". In his call to women during the Salt Satyagraha, asking them to undertake the most dangerous tasks—to picket liquor and foreign cloth shops—he wrote "They would then have accesss to a power and self-confidence to which they have hitherto been strangers." It is from this that woman gained confidence, dignity and the capacity to walk side by side with her husband, brother and comrade. The seed he planted made possible a woman Prime Minister Indira Gandhi, 36 years later. We saw in her a supreme courage, a capacity for statecraft, an abounding pride and love for her country, a capacity to reach out to touch and draw close the under-privileged, a concern for the environment, a capacity to act with precision, clarity and strength; a phenomenon that had historical, mythical and symbolic overtones.

In the last few years we find an erosion of woman's position not only in India but all over the world. There is a growing materialism and an increasing fundamentalism which seeks to entangle woman through an emphasis on tradition, heritage, custom, the Sastras, religious texts and so push her back centuries, through a man-made social code that limits woman's initiative, creativity and growth. We see fundamentalism sweeping the world, taking over the freedoms that were the gift of our seers and of those tall men and women who fought the freedom battle. We see a growing materialism in India today, a frenzied search for affluence. We are witness to a vast destruction of values that have brought us to the edge of an abyss. A vast fear and increasing irresponsibility grips us today. To understand this phenomena it is necessary to examine recent world trends against the textual background of India, its history, its social and cultural structures.

At a recent meeting in Sweden geologists suggested that the earth was entering one of the most critical periods of its history. By 202 they estimated that more than 50% of life on earth would disappear. An explosion in population, deforestation, destruction of the biosphere and of ozone levels, aids, depletion of energy resources assault humankind's life an

liberty. With the explosion in technology, in computer literacy and an increasing search for extending areas of artificial intelligence, new challenges have appeared on the horizon. Labour based on the male physique which dominated employment and defined a women's role for centuries is being replaced by skill and intelligence-oriented systems for creating wealth. It is possible in the coming decades to erase discrimination based on gender ; but in India to introduce such systems that render the human-beings less and less important in the production processes, when seen against a scenario of exploding populations, of growing unemployment, can only accentuate tension and conflict. As of today no social, economic and psychological solutions to the problem of employment are available. Planners are baffled, reservations for women remain valid on paper. The woman remains a victim.

Economic freedom and the independence that arises from it is essential for woman. We have to ensure through field studies, through education, through right use of franchise, through an observing eye and ear to unravel this knot of employment for woman. This is only possible with a right use of technology and the examination and strengthening of existing hand technologies. We abandon traditional skills and know-how of production at our peril. A fertile mind has to emerge, new intimations arise that can meet the challange of technology, that can open up the environment, seek wealth from dust. To survive employment-based development has to take place without destruction of the biosphere and species.

A growing fundamentalism is evident in the horrors that have been perpetrated on woman, in increasing dowry-deaths, in Sati, in legal wrangles of her inheritance and maintenance and girl-child abuse and neglect. We are aware how through TV, radio, advertising, magazines, visual and language traps are set up in which woman inevitably falls. This is further accentuated through an educational system, through outdated values and through a close-box culture which binds woman to her man-made role as daughter, wife and mother, so that she exists only in relation to man. In our culture the woman has no independent existence.

The battle of genders has so far not exploded in India, has it to enter India and its society and culture before women are free ? Is gaining equality with man the only answer to woman's problems ? Is man the only measure of woman's endeavour ? Or is it necessary to look in another direction ?

In the last few years I have attempted to examine within myself these challenges that baffle all solution. I have asked myself what is the **dharma** of the Indian woman today ? What are the questions she has to ask herself ? What are the directions she has to take ? How is she to touch and explode those energy resources which lie dormant within her ? How is she to free herself of the cultural strangleholds which inevitably lead to fear, insecurity and bondage ? Is it not essential for woman to put aside the Sastras, the traditional beliefs as well as the models offered to her from the West ? Is it not woman's birthright to define for herself **dharma** and its responsibilities ?

To define dharma is not the return to a mythical past. It is to discover oneself in the mirror of relationship to the earth, to nature, to oneself and one's fellow-beings. With this discovery the doors of the mind open, so that woman arises as the true measure of herself.

In the new millennium that lies ahead, in the death of the old and the birth of the new, can woman ask the right questions ? Can she shatter the frontiers of her mind and find answers in the outer landscape and explore that vast, new undiscovered territory, the inscape which lies within ? Can she discover in the two as a unitary state? This is the global mind, in it is the end of the fragmentary.

Can we create a new agenda for woman based on skill, creativity, knowledge, austerity, compassion and responsibility ? Can we create the mind as a new crucible of fertility ? □

West Zone Inter-University Youth Festival

The West Zone Inter-University Youth Festival was held at the Rajasthan Agricultural University, Bikaner from October 11 to 15, 1989.

Inaugurating the Festival, Dr. (Miss) Girija Vyas, Minister of Tourism and Women Development, Govt. of Rajasthan, remarked that "Only zealous Youth can solve national problems". She emphasized the need for programmes and events especially conceived for Youth to mobilize their energies and enthusiasm. Dr. K.N. Nag, Vice-Chancellor of the host university, who presided, pointed out that such occasions lend opportunity to Youth to express their talents and skills for developing among them proficiency through competitions.

Shri Sampson David, Cultu ra Officer, AIU, highlighted the role of AIU and Department of Youth Affairs & Sports in promoting art and cultural affairs amongst University Youth through such cultural events.

The cultural activities commen-

ced with the theatrical event of Skit, in which seventeen universities participated. The event highlighted the prevalent social and political problems of our nation. NAI CHETNA, BHARAT KA NAV NIRMAN, INSAAN KA GOSHT and CORRUPTION were some of the skits which not only portrayed these problems, but also suggested practical solutions.

In the event of Cartooning, eleven universities participated. Themes of the Cartoons were National Integration, Communalism, Corruption, etc. Bombay and Nagpur Universities were adjudged the best two enteries for the National Youth Festival.

'On the Spot Painting' was based on the theme 'Draw Your City'. The paintings of Bombay University and Banasthali Vidyapith were declared the best two.

In the Classical Vocal Solo raag 'Malkans' from Banasthali Vidyapith was followed by 'Chandrakaus' from Devi Ahilya Vishwavidyalaya, Indore; 'Madhuvanti' from Rani Durgavati, Jabalpur; 'Villambit Khayal' from Nagpur and SNDT Universities. Vocalists from SNDT and Goa Universities were regarded the best two entries.

'Youth and its development' was the theme of collage event in which ten universities participated. This was followed by Folk and Tribal Dances. 'Gaur' (Byson) dance of Madhya Pradesh was presented by the Dr. H.S. Gaur Vishwavidyalaya, Sagar. It is a popular dance of the 'Dandani Madias', inhabiting the Dantwara Tehsil of Bastar. Beautiful horns of the cows of this area are used by Madias as their head dress during dancing. The steps taken in this dance are somewhat similar to those of these cows. Shivaji University, Kolhapur presented 'Koli' folk dance which depicted the lives of fishermen during 'Sawan Ki Poonam'. Another scintillating 'Sarai' dance came from SNDT University. The word 'Sarai' means 'Shelter'—the divine shelter of the Mother goddess. On the full moon day, the priests from all villages' temples assemble together to worship Mahadevi where they dance and sing to appease the 'Mother'. Dr. H.S. Gaur Vishwavidyalaya and Shivaji University were declared as the best two entries.

In the event of 'Mime' problems like terrorism, corruption, drug addiction, foreign influence to destablise the nation etc., were projected. Rajasthan Agricultural University projected the concept of 'Tree of Unity' while a satire on corruption was presented by Sukhadia University. Marathwada University, exposed how the poor are exploited. The best mimes came from Rajasthan Vidyapith and Rani Durgavati Vishwavidyalaya.

Then came melodious rythmical English songs from Bombay, Jiwaji and Goa Universities. The songs, 'the greatest love of all' and 'Mother of Mine', presented by Jiwaji University, expressed the delicate emotions "More than the word can say". The best rendition came from DAVV, Indore—'A simple Man' during which he asked innocent questions like where the butterflies go in the rain. Devi Ahilya Vishwavidyalaya, Indore and Goa University were judged as the best two entries. This was followed by Western Group Song in which Sukhadia University presented "I am dizzy" a song with fast and thrilling music. "Fast Car" came from Rajasthan Agricultural University, while "Seasons in the sun" was rendered by the Banasthali Vidyapith.

In the event of Group Song (Indian), the participating universities presented regional folk songs which were rich in musical notes, rhythm and gaity. Participants from Panjab Rao Krishi Viydapith expressed their feelings of unity by the song 'Honge Kamyab'. Amravati and Shivaji Universities narrated bravery of Marathas through their songs. But, the songs from Banasthali Vidyapith and Rajasthan Vidyapith impressed the most and obtained the best positions.

Ghazals and Bhajans formed part of Indian Light Vocal (Solo). SNDT rendered a Meera Bhajan which was unique in comparison to other presentations. All the renderings were beautiful, but a few artists showed real promise.

The next item Classical Instrumental (Non-percussion) was presented by fourteen universities. A variety of instruments viz. Sitar, Guitar, Flute, Violin, etc. were played. Some of the ragas played were 'Nat Bhairav' on Sitar (Gujarat), 'Bihag' on Sarod (Sukhadia), 'Miyan ki Todi' on guitar (Jodhpur) and 'Bageshwari' on Violin (Pune). Entries from Goa (Sitar) and Jiwaji (Flute) universities were declared the best two.

Yoga Demonstration event in which 168 students of St. Paul's School, Udaipur performed Yoga exercises was well received. Dr. K.N. Nag, V.C. was present on this occasion and expressed his appreciation for the synchronised performance of the students.

'One Act Play' event was organised for three consecutive days. SNDT, Bombay played 'Tamasha of Humanity' depicting the fate of the poor; 'Scratches' was presented by the Bhavnagar University; Rani Durgavati University's play was entitled 'Gunahagar Kaun' which depicted how so called religious leaders help create tension among different communities; Poona University played 'Shri Satyvanchi Madhagschi' in Marathi. The best entries were those of Poona and SNDT Universities.

The most significant event of the last day was the lecture-demonstration by the world famous Kathak exponent Kumari Kajal Sharma. She was specially invited by the host university so that a number of dance lovers may be benefited.

In the valedictory function the Vice-Chancellor of the host university gave away the prizes to the winning contingents.

PG Course in Biomedical Engineering

The Manipal Institute of Technology (MIT) has started country's first postgraduate degree in Biomedical Engineering. In a function organised to mark the launching of this course, Prof. I.S.N. Murthy, Head of the Department of Electrical Engineering at the Indian Institute of Science, Bangalore, said that owing to non-availability of bio-materials indigenously the research of Biomedical Engineering has suffered a great extent. This fact had also rendered the country suffer a set back in the ancillary disciplines.

He said the Biomedical Engineering was gaining importance throughout the world and would soon emerge as the forerunner in the field of artificial intelligence. At this juncture of technical development he called on Indian Biomedical Engineering students to apply their minds in the subject to become world leaders in the subject. He said currently there was a tremendous demand for qualified biomedical technologists as only few foreign based Biomedical Engineering consultancy services were catering to country's requirements. Expressing his appreciation towards the MIT's pioneering endeavours in the field of Biomedical Engineering and also in other areas of engineering education, Prof. Murthy hailed the institution as a frontline college of technology. He lauded the strides made by the MIT during last two decades.

Presiding over the function Mr. Ramesh U. Pai, Registrar, Academy of General Education, Manipal, said though the country had enormous potential of Biomedical Engineering, due to lack of time bound policies its growth had become stagnant. He hoped with the induction of MIT's PG course things will brighten up.

He said several other factors hindering India's growth in educational field included educational finance. He lamented that the private sector, though wanted to expand educational facilities in order to reach aspiring young people, there were great many hurdles in their way created by government agencies. In contrast, in the United States he said the private enterprises were backed by the government and both efforts went hand in hand in educational finance, which had resulted in the growth of several fine institutions throughout that country. India, he said, has a long way to go in achieving philanthropic attitude towards education.

Prof. Alladi Prabhakar, Principal of the MIT, said that the three new postgraduate courses which MIT introduced were Biomedical Engineering, Lighting Science and Engineering, and Computer Applications to Management.

Prof. Ram Reddy Joins Commonwealth of Learning

Prof. G. Ram Reddy who relinquished office of the Vice-Chancellor, Indira Gandhi National Open University has assumed charge as Vice President of the Commonwealth of Learning, Vancouver (Canada). Commonwealth of Learning is a new international organisation created by the Commonwealth Heads of Government to promote human resource development through a sharing of commonwealth distance education experiences and resources.

Prof. Ram Reddy was a member of the Commonwealth Committee whose report led to the establishment of the Commonwealth of Learning. He was also a representative of the Government of India on its Board of Governors.

A former President of the Association of Indian Universities and Secretary General of the Asian Association of Open Universities, Prof. Ram Reddy has left his impression with whichever organisation he has been connected. He was the founder Vice Chancellor of the Andhra Pradesh Open University—India's First Open University. He was also the first Vice Chancellor of the Indira Gandhi National Open University (IGNOU). During his stewardship the IGNOU struck roots and in less than three years of its operation it has produced 150 courses and over 400 audio and video programmes. It has established 140 study centres and 13 regional centres and had an enrolment of 54,000 students. It has set up 7 diploma and certificate courses in advanced and specialised areas and to quote Prof. Ram Reddy himself, "(IGNOU) has registered an all India presence".

Dr. James A. Maraj, President and the Chief Executive of the Commonwealth of Learning while welcoming Prof. Ram Reddy noted that "Prof. Reddy will bring to the new organisation outstanding skills and talents amply demonstrated oves many years".

University News wishes Prof. Ram Reddy all success in his new assignment.

Futurology Seminar at Poona Varsity

Dr. S.C. Seth, Director (Futures) in the Department of Science and Technology recently inaugurated a seminar on Futurology held at the Poona University. In his address Dr. Seth emphasised that, given the fast-changing world of today and the giant strides of science and technology, it was necessary for societies to plan adequately for their futures. It was the task of futurologists to prepare prospective plans and projections and decide upon the direction of change to cope with the problems of tomorrow.

An important area for futurologists was to contemplate a world without oil or coal and develop strategies to meet the challenges of a world without conventional energy resources. He pointed out that scientist and futurologists could not ignore cultural compulsions and it was their task to integrate or, at least, build a bridge between science and technology and traditional values and customs.

Appreciating the concept of futurology and its need for modern society, Prof. S. C. Gupte Vice-Chancellor, Poona University said the university was planning a two-year M.Sc. programme in futurology from the next academic year and was also planning to set up an inter-disciplinary school of futurology. Dr. V.S. Bhide, former Vice-Chancellor, charted the progress of man since ancient times and said, today, human civilisation had become complex and dynamic and the development process was progressing with a great speed.

Futurology essentially meant critically analysing the shape of things to come. Dr. Bhide said, stressing that premier institutions of the country and the areas of education, health and population needed futurologists to plan for the years to come. He added that futurology was all the more important for India, given its geostrategic importance.

The papers presented at the three-day seminar included the futuristic aspects of materials, energy requirement, the demands and pressures of transportation and the impact of biotechnology among other issues.

The University of Poona is among the ten universities in the country which has received a grant of Rs. 20 lakhs to introduce post-graduate courses in futurology.

Differentiation, Development and Science

A three day symposium on Differentiation, Development and Science' was organised by the Department of Zoology, Banaras Hindu University (BHU). Speaking on the occasion, Prof. M.S. Kanungo a renowned Zoologist defined and explained with examples of various changes that occur at molecular and gene levels during different phases of the life span of an organism. He mentioned the research work conducted under his leadership during the last 25 years and described the senescence, the terminus phase of life span. All these phases are regulated by differential expression of genes. He also explained these processes taking different examples like differentiation of nerve and muscle cells.

Inaugurating the symposium Prof. R.P. Rastogi the Vice-Chancellor of BHU, mentioned about the award of Noble Prize in Chemistry this year, which has been received by Thomas Czech of U.S.A., who is only 41 years old. He asked youngesters to emulate him and work hard for future. He suggested conducting interdisciplinary research for understanding complex problems of development and aging from different angles of different disciplines like chemistry, physics, biology, mathematics, etc.

Environmental Appraisal and Management

The Department of Earth Sciences, Manipur University, Imphal plans to organise a seminar on "Environmental Appraisal and Management in North-East India" on 10-11 February, 1990. The seminar will provide an opportunity to academicians, administrators, planners and specially scientists and technologists to discuss the methods by which the extent of environmental degradation can be assessed and measures to be initiated for environmental conservation and betterment in the North-Eastern region.

The major themes of the seminar will be as follows :

(i) Environmental issues, problems and perception ;
(ii) Environmental resources and responses ;
(iii) Environmental planning and management : the role of science and technology ; and
(iv) Environmental policy for the next decade.

Intending participants may send their papers with abstracts latest by 15th January, 1990. The abstracts should not exceed 300 words and the full papers 10 to 12 typed pages. All correspondence regarding the Seminar should be addressed to Dr. R.P. Singh, Dirrctor of the Seminar, Dept. of Earth

Sciences, Manipur University, Imphal-795003.

ISM Admissions

The Indian School of Mines, Dhanbad has notified that the Entrance Examinations for undergraduate admissions to different courses for 1990-91 session will be held on Friday the 4th May and Saturday the 5th May, 1990 at different centres in India. Further details can be had from Shri B.N. Sinha, Dy. Registrar (Academic) & Secretary / Admission Committee, Indian School of Mines, Dhanbad-826004.

Panel for Unani Varsity

The Government of India is reported to have set up a committee to explore the possibility of establishing a central university for unani and other ancient systems of medicine. This was revealed by the Minister of State for Health and Family Welfare, Mr Rafiq Alam, while inaugurating a CGHS unit in New Delhi recently.

The university would be named after the renowned Hakim Ajmal Khan.

Nagaland Varsity Bill Passed

The Parliament has passed the Nagaland University Bill 1989, seeking to set up a central university at Lumami in the State. This was revealed by the Minister of State for Human Resource Development Mr L.P. Shahi in New Delhi recently. He also ruled out the setting up of a separate chair to promote the local language since there were as many as 52 dialects spoken in the state.

Scholarships for Studies in USA

Brandeis University, USA, has announced two scholarships—the Wien international scholarship programme and the international visiting scholar awards—for foreign students to either acquire a Bachelor of Arts degree from the university or enrich their educational background through one-year study at the university. Further details can be had from Dr. Narain Mahishi, Placement Officer, Indian Institute of Science, Bangalore-560 012.

M.Sc. (Electronics) Course

The Electronics Department of the Cochin University of Science and Technology proposes to introduce a new M.Sc. degree course in Electronics Science with specialisation in Robotics and Artificial Intelligence from the next academic year. Sponsored jointly by the University Grants Commission and the Department of Electronics (Government of India) the University has been sanctioned a grant of Rs. 56 lakhs in addition to salary for additional teaching and technical staff for running this course.

Cochin University of Science and Technology is one of the two institutions in the country selected in this phase for running this prestigious course, the other being Kurukshetra University.

News from Agril. Varsities

Bio-fertilizers Day at TNAU

The Tamil Nadu Agricultural University (TNAU) celebrated the Bio-fertilizers day in which experts in the field and developmental officials from the Department of Agriculture, Horticulture, Forestry and Animal Husbandry participated. About 100 progressive farmers also participated in the one day mela.

In his presidential address, Dr. S. Jayaraj, Vice-Chancellor of TNAU said that bio fertilizers should be used for increasing agricultural production in tropics. Biofertilizers such as Rhizobium, Azospirillum, Azolla, Blue green algae and phospho-batceria are cheap and environmentally safe. Quantitative and qualitative improvement in grain yields and biomass production of crops can be obtained through biofertilizers application.

The Vice-Chancellor noted that the Department of Agricultural Microbiology has been doing detailed research both in basic and applied aspects of biofertilizers including nitrogen fixers and phosphorus mobilizers. Several efficient strains of different biofertilizers for different crops have been evolved and field tested in different agro-climatic regions of Tamil Nadu.

Thiru Kailasam, Joint Director of Horticulture emphasised the pattern of organic gardens as in developed countries. He called upon the researchers to concentrate more on plantation crops and fruits. Thiru Somasundaram, Conservator of Forests also spoke on the increased benefits of biofertilizers in forest trees.

Dr. Randhawa Honoured

The present building of the Department of Soils of the PAU has been named as 'Dr. Narinder Singh Randhawa Soil Laboratories'

in recognition of the outstanding contributions made by Dr. N.S. Randhawa, Director-General of the Indian Council of Agricultural Research (ICAR) in the field of soil science. This was announced by Dr. Sukhdev Singh, VC, PAU in Ludhiana recently. He said that Padam Bhushan Award which was given to Dr. N.S. Randhawa on the Republic Day this year was a great honour to the entire agricultural scientists community of the country. He noted that institutions were built by dedicated workers alone. When these workers formed a team and worked together with devotion they attained success and brought laurels for their institutions.

Replying to the felicitations, Dr. N.S. Randhawa, thanked the Vice-Chancellor and other distinguished agricultural scientists present on the occasion and said that one should work with zeal and dedication without caring for the reward as work done with sincerity was a reward in itself. Dr. Randhawa remarked that the Soils Department of the PAU had the finest faculty in the country and the work done by them in the field of soil science was of international standard.

Dr. Khem Singh Gill, Director of Extension Education of the PAU said that the purpose of naming a building after an illustrious personality reminded the students and faculty of his outstanding contributions made in a particular discipline This helped inspiring the younger generation of scientists for hard work with devotion.

News from UGC

INSAT-1B Programme of UGC

Between 8th November to 15th November, 1989 the following schedule of telecast on higher education through INSAT 1-B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 12.45 p.m. to 1.45 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

12.45 p.m. to 1.45.p.m.

8.11.89

"Sand Replacement Metho d"
"Test Chart"
"Chemical Nature of Genes—Modern Genetics and Human Welfare—II"

9.11.89

"Computer Memory—II : Sequential Access Storage"
"Automatic Line for the Production of Slabs"
"Objectives of Language Learning—II"

10.11.89

"Principles of Space Communications"
"The Frog"

11.11.89

"Training Body and Mind"
"New Challenges"

12.11.89

No Telecast

13.11.89

No Telecast

14.11.89

"The Basics : Performing As a Teacher"
"Plastics and Polymers in Daily Life—II"
"New Methods of Fracture Treatment—II"

15.11.89

"Liquid Limit Test"
"Charminar : The Living Legend"
"How Does a Gene Act ? Modern Genetics and Human Welfare—III".

2nd Transmission

4.00 p.m. to 5.00 p.m.

8.11.89

"Eyes in the Sky—Remote Sensing—II"
"Dreams Which Came True"

9.11.89

"Pulse Circuits—I"
"Earthquake Effects on Civil Structures"
"Learning a Foreign Language —III"

10.11.89

"Vedic Mathematics—V"
"International Politics : India's Responses"
"A Talk with Dr. J.C. Kothari'

11.11.89

"Music of North India—Vijay Raghava Rao"
"Basic Camera Controls"
"The Art of Cartooning—I"

12.11.89

No Telecast

13.11.89

No Telecast

14.11.89

"The Basics : Focus on Mathematics"
"Panchakarma—I : Purvakarma"

15.11.89

"Eyes in the Sky—Remote Sensing—III"
"The American Vision"

AIU Library & Documentation Services

One of the important functions of the Association of Indian Universities is to act as a clearing house of information on higher education in the country. Towards this end the AIU Library is engaged in collection building and developing instruments for the dissemination of research information. Over the years a valuable collection of books and documents on different aspects of higher education has been acquired.

The Library has also developed Bibliography of Doctoral Dissertation as an effective tool in the dissemination of research information. Retrospective bibliographies covering the period 1857-1970 and 1970-75 were the first to appear. Effective 1975, however, the bibliography is issued annually in two volumes. One volume deals with Natural and Applied Sciences while the other records doctoral degrees awarded in Social Sciences and the Humanities. In addition to the normal bibliographical details like the name of the Research Scholar, the title of the thesis, years of registration for and award of the degree, and the name of the University accepting the thesis for award of a doctoral degree, the bibliography also gives name and complete address of the supervising teacher and an availability note that seeks to inform whether a copy of the dissertation is available for consultation and use in the University Library/Department or Registrar's Office.

The columns 'Theses of the Month' and 'Research in Progress' are intended to cut out the time lag between the receipt of information and its inclusion in bibliography. Such Universities as are not sending us regular information in respect of Doctoral Theses accepted and research scholars enrolled are welcome to make use of these columns.

- The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday.

CURRENT DOCUMENTATION IN EDUCATION

A List of Select Articles Culled from Periodicals received in the AIU Library during October, 1989.

EDUCATIONAL PHILOSOPHY

Arora, G.L. Quest for quality in education. *Edn Q* 38(1), 1986, 5-8.

Groves, P.R. Enterprise, culture and anarchy. *Hr Edn Rev* 21(3), 1989, 7-20.

EDUCATIONAL POLICY AND PLANNING

Guruswamy, P. Robert. Long-range planning of colleges : Philosophy and techniques, *New Frontiers Edn* 19(2), 1989, 195-206.

Port, Jim and Burke, Jacqueline. Business planning for higher education institutions. *Hr Edn Q* 43(2), 1989, 125-41.

Srivastava, P.N. From an age of things to an era of thoughts. *Yojana* 33(14 & 15), 1989, 22-26, 38.

EDUCATIONAL ADMINISTRATION

Amrik Singh. The tragedy of Aligarh. *Mainstream* 27(54), 1989, 7-11.

Birnbaum, Robert. The latent organizational functions of the academic senate. *J Hr Edn* 60(4), 1989, 423-443.

Duncan, J.G. Marketing of higher education : Problems and issues in theory and practice. *Hr Edn Q* 43(2), 1989, 175-88.

Dyson, Kenneth. Managing university-public relations : Theory and practice. *Hr Edn Rev* 21(3), 1989, 21-40.

Okorie, N.C. The principalship : A fundamental and functional overview. *New Frontiers Edn* 19(2), 1989, 165-78.

Swanson, Austin D. Restructuring educational governance: A challenge of the 1990s. *Ednl Admn Q* 25(3), 1989, 268-93.

Zaidi, S.M.I.A. Planning and management of colleges : Use of computers. *New Frontiers Edn* 19(2), 1989, 179-83.

CURRICULUM

Daniel, J.T.K. The significance of religious studies in India today. *New Frontiers Edn* 19(2), 1989, 184-94.

TEACHERS & TEACHING

Baacke, Dieter. Teachers and teaching : An educational analysis. *Universitas* 31(2), 1989, 97-104.

Conley, Sharon C and others The school work environment and teacher career dissatisfaction. *Ednl Admn Q* 25(1), 1989, 58-81.

O'hear, Philip. Teaching and learning : Practical issues of pedagogy. *British J Ednl Studies* 37(1), 1989, 44-53.

Weaver, Frederick S. Scholarship and teaching. *Ednl Record* 70(1), 1989, 55-58.

EDUCATIONAL RESEARCH

Ball, Christopher. The problem of research. *Hr Edn Q* 43(3), 1989, 205-15.

Emmert, Mark A and Crow, Michael M. The cooperative university research laboratory : Policy implications for higher education. *J Hr Edn* 60(4), 1989, 408-22.

Fairweather, James S. Academic research and instruction : The industrial connection. *J Hr Edn* 60(4), 1989, 388-407.

Kulik, James A and Kulik, Chen-Lin C. Meta-analysis in education. *Intl J Edni Res* 13(3), 1989, 223-335.

EDUCATIONAL TECHNOLOGY

Ely, Donald P. The diffusion of educational technology in Indonesia : A multi-faceted approach. *British J Edni Tech* 20(3), 1989, 183-90.

Goktepe, Mesut and others. Design and implementation of a tool for teaching programming, *Computers Edn* 13(2), 1989, 167-78.

Saksena, Gopal. Educational TV programmes. *Edn Q* 38(1), 1989, 21-23.

EDUCATIONAL EVALUATION

Arden, Eugene. Who should judge the faculty ? *Coll Bd Rev* (152), 1989, 37-40.

Chalifour, Clark L and Powers, Donald E. The relationship of content characteristics of GRE analytical reasoning items to their difficulties and discriminations. *JEM* 26(2), 1989, 120-32.

Das, Mamota and Rathor, Raka. Cheating behaviour and locus of control under achieving and non-achieving conditions. *Prog-Edn* LXIII (10-11), 1989, 226-30.

Edwards, Robert. An experiment in student self-assessment, *British J Edni Tech* 20(1), 1989, 5-10.

Lenn, Marjorie Peace. Accreitation and planning in the assessment movement. *Edni Record* 70(2), 1989, 48-9.

Neumann, Yoram and Neumann, Edith Finaly. An organizational behaviour model of students' evaluation of instruction. *Hr Edn* 18(1), 1989. 227-38.

ECONOMICS OF EDUCATION

Majumdar, Tapas. Investment in literacy for a high-technology society. *Eco Pol Weekly* 24(30), 1989, 1711-15.

Santhanam, M.R. Degree-job delink : Genesis and perspectives of the proposal. *The Edn Q*, 1986, 38(1), 9-12.

Wise, Arthur E and Gendler, Tamar. Rich schools, poor schools. *The Coll Bd Rev* (151), 1989, 12-17, 36-37.

Woodhall, Maureen. Marketing British higher education overseas : The response to the introduction of full-cost fees. *Hr Edn Q* 43(2), 1989, 142-59.

DISTANCE EDUCATION

Gaskell, Anne. Interaction and independence in distance education—What's been said and what's being done ? *Open Learning* 4(2), 1989, 51-2.

McCleary, Iva Dene and Egan, M. Winston. Program design and evaluation : Two-way interactive television. *The American J Distance Edn* 3(1), 1989, 50-60.

Miller, Jay K. Indira Gandhi National Open University. *Open Learning* 4(1), 1989, 53-55.

Twining, John and others. ROLF—an open learning delivery system. *British J Edni Tech*. 20(2), 1989, 129-34.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Lee, Sungho. The emergence of the modern university in Korea. *Hr Edn* 18(1), 1989, 87-116.

Nakayama, Shigeru. Independence and choice : Western impacts on Japanese higher education. *Hr Edn* 18(1), 1989, 31-48.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Mukhopadhyay, Barun. *Bioanthropology and its socio-cultural correlates among the Lepchas of Kalimpong Subdivision, Darjeeling District, West Bengal.* Calcutta.

2. Ray, Jharna. *A bio-anthropological study of cancer.* Calcutta.

Biochemistry

1. Bhargava, H.K. *Effect of steroid hormones on the rat brain.* Baroda.

2. Khan, Sikandar Gauhar. *Interaction of particulate air pollutants with biological macromolecules.* AMU, —89, Prof. A.M. Siddiqui.

3. Parmar, Kalindi Tapubhai. *Studies on bacterial degradation flatulence producing aligosaccharides and neurotoxin (ODAP) present in Lathyrus sativus.* Baroda.

4. Raha, Syamal Kumar. *Studies on L-asparaginase activity of a fungus.* Calcutta.

5. Randhawa, Varindra. *Formation of artificial casein micelles and their physico-chemical studies.* PAU.

Microbiology

1. Parikh, Bina Harnishkant. *Studies on the symbiotic association between cowpea rhizobia and Arachis hypogaea.* Baroda.

2. Mittal, Shikha. *Studies on ureide and amide levels and effect of tungstate on nitrate utilization nodulation and growth in Cicer arietinum L.* Osmania.

Botany

1. Anbazhagan, M. *Ecophysiological responses of certain rice, Oryza sativa L. varieties to air pollution.* Baroda.

2. Arshi, Mumtaz. *Physiological studies on growth tuberization and yield in potato Solanum tuberosum L. in rela*

tion to cinnamic acid. Rohilkhand. Dr. M.A. Siddiqui, Govt. Raza Post-Graduate College, Rampur, Moradabad.

3. Arvind Kumar. *Effects of salt stress on physiology of guar, Cyamopsis tetragonoloba (L) Taub.* Rohilkhand. Dr. B.K. Sharma, Bareilly College, Bareilly.

4. Balakisna Reddy, G. *Ecological studies in the river Kagna near Tandur (A P.) with special reference to water quality and pollution.* Osmania.

5. Basu, Mitra. *Physiological and biochemical studies on some edible mushrooms of West Bengal.* Calcutta.

6. Bisen, Suryapratap Singh. *Scanning electron microscopic studies of the epidermis of culms and leaves of some important bamboos of the Indian sub-continent in relation to their classification.* HS Gour. Prof G.P. Mishra, Department of Botany, Dr. Harisingh Gour Vishwavidyalaya, Sagar and Dr. S C Sharma, Ecologist, Forest Ecology, Forest Research Institute, Dehradun.

7. Khan, Naved Bahar. *Physiological studies on growth tuberization and yield in potato, Solanum tuberosum L in relation to coumarin.* Rohilkhand. Dr. P. Kumar, Govt. Raza Post-Graduate College, Rampur, Moradabad.

8. Koteswara Rao, Neeli Rama. *Anatomical and histochemical studies on some poisonous plants from South India as an aid to forensic science.* Osmania.

9. Namboodiri, Usha. *Ecology of the algae in the river Kulbehra, Chhindwara with special reference to pollution.* HS Gour. Dr. K.S. Unni, Prof., Department of Botany, Govt. Post-Graduate College, Chhindwara, Madhya Pradesh.

10. Narasimha Rao, Geddada Mohan. *Ecological studies on some estuarine and marine algae.* Andhra.

11 Rattan, Rajinder Singh. *Taxonomic studies on Zygnemaceae of Panjab and its adjoining area.* Punjabi.

12. Sen, Prasanta Kumar. *Palaeoenvironment of Bengal basin during Holocene period through study of biological remains.* Calcutta.

13. Suryaprakasa Rao, N. *A study on heterosis breeding employing a male sterile line, effect of some agricultural chemicals and cytogenetics of certain mutants in chilli, Capsicum L.* Nagarjuna.

14. Swain, Padmini. *Photosynthesis, crop growth and productivity in rice varieties.* Utkal.

Zoology

1. Amala Devi, B. *Effects of electropolarity treatment and on some aspects of metabolism in the toad, Bufo melanos, tictus with special reference to the gastrocnemius muscle* Venkateswara. Dr. K. Indira Sriram, Department of Zoology, Sri Venkateswara University College, Tirupati.

2. Athalye, Raghunandan Prabhakar. *Status of Macrobenthos in detritus food chain of Thane creek near Thane city* Bombay.

3. Bhagya Lakshmi K *Chromatographic, enzymatic and colorimetric methods for select hazardous environmental contaminants with special reference to cyanide poison in medicinal drugs.* Venkateswara. Dr N.V. Nanda Kumar, Department of Zoology, SVU College, Tirupati.

4. Borgaonkar, Surekha Sharad. *Study of Ilyoplax gangetica (kemp) with some of the ecological parameters.* Bombay.

5. Chaki, Korakkanti. *Some biochemical and histochemical observations on active and aestivating pestiferous molluse, Achatina fulica.* Calcutta.

6. Chattopadhyay, Aruna. *Studies on cat-fish, heteropneustes fossilis hepatic metallothioncik.* Calcutta.

7. Chattopadhyay, Mamata. *Adrenomedullary participation in certain aspects of avian carbohydrate metabolism.* Calcutta.

8. Ghosh, Bhaswati. *Effects of ascorbic acid and dehydroascorbic acid as diabetogens in avian group.* Calcutta.

9. Ghosh, Mrinalkanti. *Ecobiology of intertidal benthic amoebae (Protozoa : Gymnamoebia) of the Deltaic Ganga estuarine complex, India.* Calcutta.

10. Ghosh, Shishir Kumar. *Studies on the banana stem borer weevil, Odoiporus longicollis Oliver with reference to bionomics and relative efficacy of some important insecticides.* Rajendra Agri.

11. Gouri Kumari, P. *The role of second messenger IP_3 during Ec coupling phenomenon in the skeletal muscle gastrocnemius of the frog Rana hexadactyla.* JNU. Prof. M. Habibulla, School of Life Sciences, Jawaharlal Nehru University, New Delhi.

12. Hanumantha Raju, P. *Some aspects of neuroendocrine regulation of energy metabolism in aestivated snail.* Venkateswara. Dr. P. Reddanna, Department of Zoology, SVU College, Tirupati.

13. Jayanth, R. Vikram. *X-ray sensitivity of human diseases and syndromes as estimated by induced chromosomal aberrations in peripheral blood lymphocytes.* Bangalore. Dr. (Mrs) I. Manorama Thomas, Head, Department of Genetics, Osmania University, Hyderabad.

14. Joseph K. Vijay. *Effect of aldrin, an organochlorine compound on frog, Rana hexadactyla.* Venkateswara. Dr. K. Jayantha Rao, Department of Zoology, Sri Venkateswara University College, Tirupati.

15. Jyothi, P. Aran. *Studies on the pattern of changes in female reproductive physiology of albino rats associated with physical exercise.* Venkateswara. Dr. S. Govindappa, Department of Zoology, SVU College, Tirupati.

16. Kar, Chandra Sekhar. *Ecological studies on the pacific ridley sea, turtle, Lepidochelys olivacea on the Orissa Coast.* Sambalpur. Dr. M.G. Dash, Prof., School of Life Sciences, Sambalpur University, Jyoti Vihar, Burla and Dr. H.R. Bustard, F.A.O. Consultant, Central Crocodile Breeding and Management Training Institute, 19-4-319, Lake Dale, Rajendra Nagar, Hyderabad.

17. Khan, Taraknath, *Studies on some cerambycid beetles (Coleoptera) of Andaman and Nicobar Island, India.* Calcutta.

18. Kum Kum. *A study of the internal reproductive organs of some Indian Curculionidae and their significance in taxonomy (Coleoptera : Insecta).* Panjab.

19. Maya Devi, T. *Mast cells as targets to organic dusts and organic chemicals.* Venkateswara. Dr. K. Indira Sriram, Department of Zoology, Sri Venkateswara College of Arts and Sciences, Tirupati.

20. Nigar Sulthana, R. *Regulation of certain glycolytic events in denervation hypertrophy by electropolarity treatment.* Venkateswara. Dr. (Mrs.) K. Indira Sriram, Department of Zoology, SVU College, Tirupati.

21. Pejaver, Madhuri Kiran. *Influence of biotic and abiotic factors on the biology of commercially important prawn, metapenaeus monoceros Fabricius of Thana Creek near Thane City.* Bombay.

22. Perumallu, K. Raghava *Metabolic alterations during induced ammonia stress in selected tissues of toad, Bufo melanostictus.* Venkateswara. Dr. P. Neeraja, Department of Zoology, Sri Venkateswara University, Tirupati.

23. Rajeswari, K. *Effect of low concentrations of endosulfan on certain metabolic aspects of a freshwater crab.* Venkateswara. Dr. D. Chandrasekhara Reddy, Department of Zoology, Sri Venkateswara University, Tirupati.

24. Sumathi, V.P. *Alternations in some metabolic aspects by induced electropolarity in a freshwater bivalve Lamellidens marginalis Lamarck.* Venkateswara. Dr. K. Indira Sriram, Department of Zoology, Sri Venkateswara University College, Tirupati.

25. Tandel, Sunanda Shantaram. *Effect of biotic and abiotic factors on the biology of Mystus qulio (Ham).* Bombay.

26. Vijayan, K.K. *Studies on the phy siology of moulting in the penaeid prawn, Penaeus indicus H. Milne Edwards.* CUST. Dr. A.D. Diwan, Scientist, Central Marine Fisheries Research Institute, Cochin.

Medical Sciences

1. Banawri, Anurag. *Immunological studies in some methyl isocyanate (MIC) gas exposed individuals from the most affected areas of Bhopal.* Barkatullah. Dr. B.S. Darbari, Department of Pathology, Govt. Medical College, Bhopal.

2. Chowdary, P. Sadhana. *Evaluation of genotoxicity of sulphasalazine—A drug used for ulcerative colitis in mammalian and human system.* Osmania.

3. Ghoshal, Kalpana. *Carbohydrate metabolism of Leishmania donovani.* Calcutta.

4. Mukhopadhyay, Asima. *Role of prostaglandins of neuro muscular functions.* Calcutta.

5. Patel, Bharatkumar Natubhai. *Pharmaceutical studies on some topical formulations.* Baroda.

6. Prakasam, Kalyani. *Effect of additives on sulpha drug dosage forms.* Baroda.

7. Ray, Manas Kumar. *Biochemical studies on the comparative mode of action of lipopolysaccharides of Agrobacterium tumafaciens and Salmonella typhimurium in the mammalian system.* Calcutta.

8. Saxena, Kiran. *Study of lipid and protein profile in diabetes mellitus and obesity in relation to the level of glycosylated hemoglobin.* South Gujarat. Dr. N.B. Vasavada C/o Dr. R.N. Vasavada, Ami Hospital, Opposite S.T. Bus Station, Modasa, Distt. Sabarkantha.

Agriculture

1. Anand, Daisy. *Identification of genetic factors for adult plant leaf rust resistance to race 77 in wheat.* PAU.

2. Choudhary, Nawal Kishore. *Nitrogen fertilization irrigation scheduling and seed furrow mulching for late sown wheat.* Rajendra Agrl.

3. Deosarkar, Deorao Baburao. *Inheritance of iron chlorosis tolerance on vertisols, plant height, yield and grain quality traits in indica rice, Oryza sativa L.* Marathwada. Dr. Y.S. Nerkar, Head, Department of Genetics and Plant Breeding, Marathwada Agricultural University, Parbhani

4. Joginder Singh. *Effect of different rootstocks and moisture levels on growth, water relations and nutrient uptake of container-grown apple plants.* YS Parmar. Dr Jagmohan Chauhan, Department of Fruit Culture and Orchard Management, College of Horticulture, Solan.

5. Kanhaiya Prasad. *Integrated fertilization under intercroping of sugarcane and tobacco.* Rajendra Agrl.

6. Kawale, Balkrishna Raghunath. *Inheritance of rust, resistance in groundnut.* Marathwada. Dr. C.D. Mayee, Head, Department of Plant Pathology, Marathwada Agricultural University, Parbhani.

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Educational Consultants India Limited

(A Government of India Enterprise)

PROFESSORS, ASSOCIATE PROFESSORS FOR THE UNIVERSITY OF MAURITIUS

Educational Consultants India Limited (Ed. CIL), a Government of India Enterprise, invites applications for recruitment of Professors/Associate Professors in various disciplines for the University of Mauritius. Requirements for the posts, emoluments and perks admissible are as follows :

1. SCHOOL OF SCIENCE

Sl. No.	Designation of Post and No. of Posts to be filled	Salary (in Mauritian Rupees)*	Qualifications and Experience/Duties
1	2	3	4
(i)	**Professor in Organic Chemistry—One**	Rs. 14,500 p m.	**Qualifications :** Ph.D. together with post-doctoral experience. **Experience :** Candidates should have research interests in the field of Natural Products Chemistry. **Duties :** (i) to organise and contribute to the teaching of under-graduate work. (ii) to initiate and supervise research in the field of Natural Products Chemistry.
(ii)	**Associate Professor/ Professor in Physical Chemistry—One**	Rs. 12,600 p.m./ Rs. 14,500 p m.	**Qualifications :** Ph.D. together with post-doctoral experience. **Experience :** Candidates should have research interests in any of the following areas of Physical Chemistry : Spectroscopy, Chemical Kinetics, Electro-chemistry, Surface Chemistry. **Duties :** (i) to organise and contribute to the teaching of under-graduate work. (ii) to initiate and supervise research in their field of specialisation.

2. SCHOOL OF ENGINEERING

(i)	**Associate Professor/ Professor in Mechanical Production Engg.—One**	Rs. 12,600 p.m./ Rs. 14,500 p.m.	**Qualifications :** At least a higher degree, preferably a Ph.D. **Experience :** Relevant Professional, including teaching and research/industrial experience. **Duties :** (i) to lecture in Manufacturing Management and/or CAD/CAM.

* One Mauritian Rupee = One Indian Rupee (Approx.).

1	2	3	4
			(ii) to initiate and supervise industrially based projects, possibly at post-graduate level. (iii) to develop further the necessary link with industry and strengthen the consultancy facet of the MPE Unit.
(ii)	**Associate Professor/ Professor in Computer Science—One**	Rs. 12,600 p.m./ Rs. 14,500 p.m.	**Qualifications :** A Ph.D. in Computer Science with one or more of the following specialisation : Data Base Systems, Information Systems/ Information Technology; Software Engineering; Computer Networking. **Experience :** (i) Previous experience in the Management of a Computer Centre. (ii) Proven track of records in research. Ability to initiate and lead research. (iii) Industrial experience will be an asset for this faculty position. **Duties :** (i) The candidate for this post should be in a position to formulate policies for the expansion of the Computer Centre of the University of Mauritius (ii) Duties will include undergraduate teaching, curriculum development, and conducting research. (iii) To develop further the necessary link with industry and strengthen the consultancy facet of the Computer Centre Unit.
(iii)	**Associate Professor/ Professor in Electronic Engineering—One**	Rs. 12,600 p.m./ Rs. 14,500 p.m.	**Qualifications :** A Doctorate in Electrical Engineering. **Experience :** Specialisation in the areas of Communication and Digital Electronics, strong commitment to high quality under-graduate education, ability to improve undergraduate programme and potential for initiating research and development of research programme. **Duties :** (i) To teach existing course (Diploma / B.Tech. Electronic/Electrical Engg.). (ii) To plan future development of labs. (iii) To develop/improve the hardware of the Computer Centre. (iv) To develop applied research in the electronic field appropriate for local need.

GENERAL

— In addition to salary indicated against each post, gratuity of 25% of salary is payable : 10% payable in monthly instalments and 15% payable at the end of contract.

— **Age** : The applicant should not be more than 50 years of age as on 1st November, 1989.

— **Housing** : If available, Government quarters furnished with basic heavy furniture are allocated rent free. Heavy furniture include only chairs, tables, cupboards, beds, mattresses, water heater, and electric cooker.

If Government quarters are not provided, house rent allowance will be paid at the following monthly rates :

— Single or married with one child	Rs. 4,000
— With 2-3 children	Rs. 5,000
— With more than 3 children	Rs. 6,000

— **Passage** : Air-passage will be provided for self, spouse and dependent children below the age of 18 years at the beginning and end of contract assignment.

— **Period of Contract** : 2 years

— **Remittance** : Repatriation of entire savings allowed.

— **Passport** : The applicant should be a valid Passport holder or should manage the same latest by 15th December, 1989.

— Qualified candidates on their own cost will be invited to appear before a Selection Board in New Delhi between 15-20 November, 1989, at which senior Mauritian University officials will be present.

HOW TO APPLY

Applications accompanied by supportive documents, two recent passport size photographs, "No Objection Certificate" from the present employer, etc., should reach the Administrative Officer, Educational Consultants India Limited, A-1/111, Safdarjang Enclave, New Delhi—110029, in the enclosed format latest by 8th November, 1989. Incomplete applications are likely to be rejected. Canvassing in any form will be a disqualification.

APPLICATION FOR THE POST OF PROFESSOR/ASSOCIATE PROFESSOR IN (SUBJECT) FOR UNIVERSITY OF MAURITIUS

1.	Name in full (in block letters)	Mr./Mrs./Miss	
2.	(a) Date of Birth		
	(b) Age as on 01.11.1989	Completed Years	Months
3.	(a) Marital Status	Single/Married	
	(b) No. of Children		
4.	Has your husband/wife applied for the above post ? If yes, please give information.	Yes/No Name	Post applied
5.	Address	Mailing	
		Permanent	
6.	Particulars of examination passed and qualification obtained (commencing from matriculation or equivalent examination)		

Exan. passed	Medium of instruction	Board/ Univ.	Year of Passing	Class/ Division	Subjects Studied

7. Language known	Read	Write	Speak
8. Training received in India/abroad			

Sl. No.	Subject of Training	Year	Place	Duration

9. Present post held, designation, name of employer with complete details, viz., date of appointment, pay, scale of pay, etc.

10 Employment history, starting with the employment prior to the present shown in Sl. No. 9 above with complete details.

11. Field of specialisation :

Sl. No.	Field of Specialisation	Period of Experience

12. Have you been on any foreign teaching assignment ? If yes, give details :
    a. Type of assignment UN/ITEC/Bilateral.
    b. Name of the country/organisation.
    c. Duration of the assignment.
13. Whether you are holding a Passport. If so, give Passport No. and date and place of issue. (Please ensure that the passport contains emigration clearance).
14. Have you ever been found guilty of any law ? Are any vigilance enquiries pending against you ? If yes, give details in a separate sheet.
15. Name and address of the next of kin with relationship in India.
16. Name and address of two references who are not related to the applicant.

I certify that the information given above is true, complete and correct to the bast of my knowledge and belief.

Signature

Date :

Name in Capital Letters

GURU GHASIDAS UNIVERSITY

BILASPUR, M.P.

No. 6582 Estt./UTD/Advertisement **Dated : 17.10.89**

LAST DATE : 20th November, 1989

Applications on the prescribed Form (in seven copies) are invited from eligible candidates for the following posts in the University Teaching Department/ Library, so as to reach the undersigned on or before 20th November, 1989.

S. No.	Name of the Post	Subject	No. of Post	Pay Scale
1.	Professor	Hindi	1 Post	4500-7300
		English	1 Post	4500-7300
2.	Reader	English	1 Post	3700-5700
3.	Lecturer	English	1 Post	2200-4000
		Physical Education	1 Post	2200-4000
4.	Librarian	—	1 Post	4500-7300
5.	Assistant Librarian	—	1 Post	2200-4000

The qualifications prescribed for the above posts are as under :

For Professor : An eminent outstanding scholar in the subject having secured at least 55% at the post-graduate Examination and at least 50% marks in Graduate Examination with the subject applied for, from a recognised University with published work of high standard and should be actively engaged in research in the subject. Should possess at least ten years experience of teaching the subject of which five years should be as Reader or in an equivalent position together with experience of guiding research at Doctoral level. Should have experience of teaching M. Phil classes.

For Reader : (1) Master's Degree in the subject with at least 55% marks at the Post-Graduate Examination and with at least 50% marks in Graduate Examination with the subject applied for from a recognised University.

(2) A Doctoral Degree/M. Phil in the subject.

(3) Five years experience of teaching U.G /P.G. classes having atleast three years of these as University Lecturer or in an equivalent position.

For Lecturer in English

Master's Degree in the subject with atleast 55% at the Post Graduate Examination together with atleast 50% marks in Graduate examination with the subject applied for from a recognised University.

(2) A Doctoral Degree/M. Phil in the subject.

For Lecturer in Physical Education

(1) Master's Degree in the subject of Physical Education with atleast 55% marks at the Post-Graduate Examination together with atleast 50% marks in Graduate examination of Physical Education from a recognised University.

(2) An M.Phil Degree or equivalent.

For Librarian

(1) Master's Degree in Library Science/Information Science with atleast 55% marks at the Post-Graduate examination together with atleast 50% marks in Graduate Examination of Library Science/Information Science.

Atleast Eight years experience as a Deputy Librarian in a University Library or 15 years experience as a college Librarian.

Desirable : M. Phil/Doctorate in Library Science/Documentation/Archives and manuscript keeping.

For Assistant Librarian

(1) Master's Degree in Library Science/Information Science with at least 55% marks at the Post-Graduate examination together with atleast 50% marks in Graduate Examination of Library Science/Information Science from a recognised University.

Application forms can be obtained from the Unive rsity Office on payment of Rs. 10.00 or by making a written request by post to the Registrar, accompanied by a crossed postal order of Rs. 16.00, drawn in favour of the 'Registrar, Guru Ghasidas University, Bilaspur' with self-addressed envelope (10" x 5").

Incomplete applications, applications not on the prescribed form, and applicants not having advertised qualification will be rejected.

All appointments will normally be on Two years probation. The age of superannuation as also, the allowances and benefits of pension, gratuity, provident fund will be admissible under the rules in force from time to time.

Applicants who are in employment in Government / Semi - Government/ Organisation/Educational Institute or of any Govt. undertaking must send their applications through proper channel, but advance copy should reach the University in time. No applicant shall be permitted to face the interview or shall be considered without 'No Objection Certificate' of the Department concerned.

No T.A./D.A. will be admissible to the candidate if called for interview.

The Selection Committee may consider the case of any person in absentia. Only eligible candidates may be called for interview.

The University reserves the right to fill up or not to fill up any post advertised.

The candidates will have to produce the original documents relating to age, qualifications, experience, etc. at the time of interview.

Canvassing in any form by or on behalf of the candidate will disqualify.

Khowledge of Hindi will be desirable for all the posts.

Candidates who had applied for any of the posts with reference to earlier advertishment(s) shall also apply afresh.

P.B. Trivedi
REGISTRAR

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MEERUT UNIVERSITY
MEERUT

Applications are invited for the following teaching posts. The application on prescribed form should reach the Registrar, Meerut University, Meerut-250005 latest by 24.11.1989.

(A) One post of Professor in each subject (1) Economics, (2) Sociology. (3) Physics (leave Vacancy), (4) Psychology (w.e.f. 1st July, 1990) in the grade of Rs. 4500-150-5700-200-7300.

(B) One post of Reader in each subject (1) Education, (2) Psychology in the grade of Rs. 3700-125-4950-150-5700.

(C) One post of Lecturer in each subject (1) Sociology, (2) Russian Language, (3) Maths (Leave Vacancy likely to continue), (4) Physics (Leave Vacancy) in the grade of Rs. 2200-75-2800-100-4000.

Minimum Qualifications : The minimum essential qualifications and other terms and conditions of the above posts are the same as prescribed by the Meerut University Statutes. Other things being equal, preference will be given to the Scheduled Caste/Tribe candidates who are considered fit. Such candidates should attach certificate to that effect from the District Magistrate.

Prescribed application form can be obtained by sending a request to the Dy. Registrar (Accounts), Meerut University, Meerut-250005 alongwith a self-addressed envelope of size 23 x 10 cms. and stamped worth Rs. 2.40 accompanied by a Bank Draft of Rs. 20/- in favour of the Finance Officer, Meerut University, Meerut or by cash payment of Rs. 20/- at the Cash Counter. I.P.Os or M.Os. are not acceptable. While requesting for application form please mention "Application for Teaching Post" on the envelope.

The candidates who have already applied on prescribed form in reference to our previous advertisements for the post(s) mentioned at A(1), (2), B(1), (2) and C(1), (2), (3) above need not apply again but they must inform the Registrar through Regd. Post for considering their candidature sending therewith upto-date Bio-data latest by 24th Nov., 1989 if they still wish to be considered for the post(s) otherwise their candidature may not be considered.

V.B. Bansal
REGISTRAR

VALLABHBHAI PATEL CHEST INSTITUTE
UNIVERSITY OF DELHI
DELHI-110007

Applications are invited for the post of Director, Vallabhbhai Patel Chest Institute, University of Delhi, Delhi-110007, on the prescribed form, in the pay scale of Rs. 2500-125/2-2750 (pre-revised) plus Non-Practicing Allowance, D.A., C.C.A. and H.R.A. as admissible under the rules inforce in the Institute from time to time. (The scale is likely to revise).

Qualifications : A scholar of eminence, Medical Graduate of at least 15 years' standing with post-graduate qualification (recognised by the Medical Council of India). Not less than 10 years experience in teaching and research in areas of Chest and allied disciplines. Administrative experience as Head of Clinical or Research Institution or Department desirable.

Prescribed application form and other details can be had personally by visiting Office of the Institute or by sending a self-addressed envelope (size 23 × 10 cms) with postage stamps worth Rs. 6/- addressed to the Administrative Officer, Vallabhbhai Patel Chest Institute, University of Delhi, Delhi-110007.

The last date for receipt of applications is 15th December, 1989.

Satish Chandra
ADMINISTRATIVE OFFICER

UNIVERSITY GRANTS COMMISSION
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Special Recruitment Drive for S.C. and S.T.

Applications are invited for one temporary post of Scientific Officer (Junior) (reserved for Scheduled Caste) for the Computer Cell likely to continue in the office of the University Grants Commission, New Delhi.

Qualifications

Essential	:	M.Sc./M.Com./M.A./M.B.A. with five years experience of working in Computers. Additional Qualification in Computer Science/ applications/programming is desirable.
Scale of Pay	:	Rs. 2200-75-2800-EB-100-4000
Age	:	Upto 40 years (Relaxable by five years for employees of Central and State Govt., Universities and Autonomous Organisations) and also relaxable in the case of Scheduled Castes/Scheduled Tribes.

Retirement benefits to the permanent employees of the Commission are available in the shape of Pension-cum-Gratuity-cum-G.P. Fund. The employees of the Commission are also entitled to the benefits of the Central Govt. Health Scheme and allotment of residential accommodation in the general pool of the Govt. of India in their turn.

Applications on plain paper addressed to the Secretary, University Grants Commission giving full particulars about age, academic qualification, experience, present pay and the scale of pay, etc. alongwith names of two persons to whom reference may be made by the Commission should reach the office of the University Grants Commission, Bahadur Shah Zafar Marg, New Delhi-110002 within 30 days from the date of issue of this advertisement.

Persons already in employment should send their applications through their employers otherwise these will not be entertained.

Candidates, if called for interview, will be paid railway fare both ways from their present place of residence to Delhi/New Delhi and back to the extent of second class railway fare or actual bus fare by the shortest route in respect of outstation candidates provided the distance travelled by rail each way exceeds fifty kilometres.

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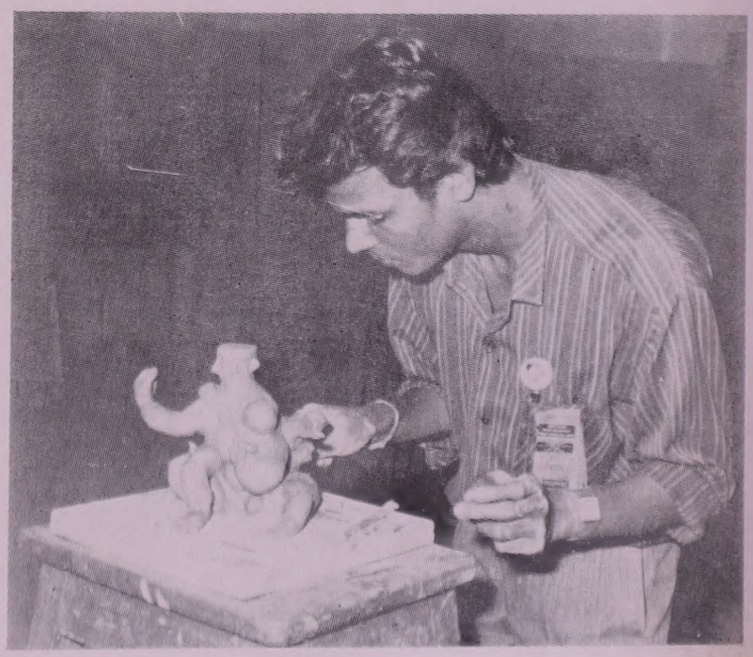

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